

# MANUFACTURERS' RECORD

A Weekly Southern Industrial and Hardware Newspaper.

VOL. XIV. No. 12.  
WEEKLY.

BALTIMORE, OCTOBER 27, 1888.

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Works: FRANKFORD AVE., WILDEY & SHACKANAXON STS.  
Branch Office, 108 Liberty Street, NEW YORK.

## Report of the AQUEDUCT Commissioners.

[NEW CROTON AQUEDUCT, NEW YORK.]

AN ELABORATE VOLUME, CONTAINING AUTHORITATIVE TABLES BY THE CHIEF ENG., B. S. CHURCH. JUST ISSUED.

**PLANT** (by actual count from Table 13.)

Number of Ingersoll Drills used..... 449  
Number of Drills of all other kinds used..... 103

**PROGRESS** (by actual figures from Table 8.)

Average weekly progress in best 10 headings that used Ingersoll Drills exclusively (omitting all idle weeks)..... 38.73 ft.

Average weekly progress in best 10 headings that used other drills exclusively (omitting all idle weeks)..... 31.68 ft.

DIFFERENCE OF 20 PER CENT. IN FAVOR OF INGERSOLL DRILLS.

All headings where Ingersoll Drills were used exclusively have been completed. Send for description of Aqueduct, with Engineers' Tables of Progress and Catalogue. Sent free.

**INGERSOLL ROCK DRILL CO.,**  
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"PERFECTION IN HOUSE HEATING BY STEAM."

The GORTON BOILER is a Wrought Iron Sectional Tubular Independent Steam Boiler, and needs no brick work in setting. The GORTON BOILER is made of Best Refined Iron and Steel. Can be used as Self-Feeding or Surface-Burning. It has been four seasons before the public, and received the highest praise of "Press, Architects, Builders and Physicians."

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Mill Machinists and Railroad Supplies and Machinery.

SOUTHERN AGENTS FOR

The Dodge Patent Wood Split Pulleys.

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Write for price-lists and discounts.



**500 Tons**

**New Rails,**  
All Weights.

We have for immediate delivery, at Cincinnati or Portsmouth, Ohio, 500 Tons selected second hand 34 Pound Iron Rails in good condition.  
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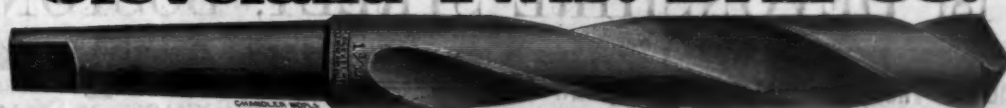
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Splices,  
Switches.

**34 Pounds.**

Established 1874.

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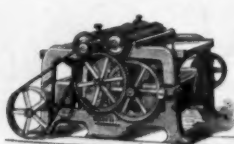
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Expanding Reamers,  
Shell Reamers,  
Stay-bolt Taps,  
Taper Reamers.

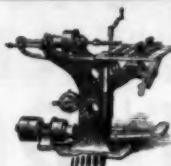
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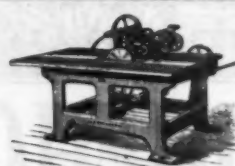
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No. 3—Molding Machine.

No. 2.  
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Every Machine Tested and Warranted.

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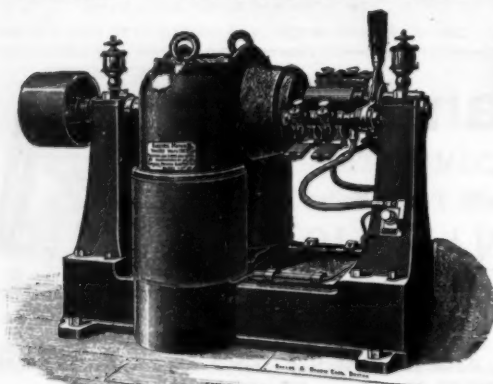
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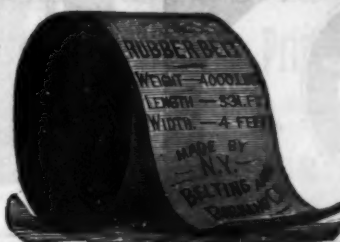
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DOES NOT  
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Reliable,  
FOR ALL  
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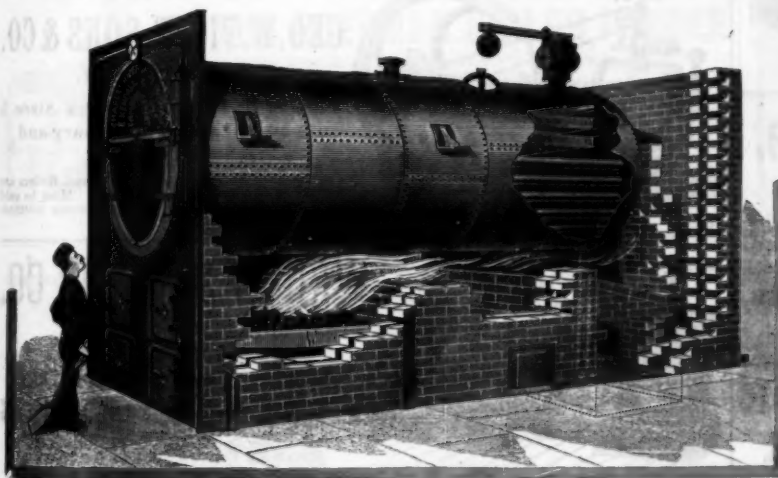
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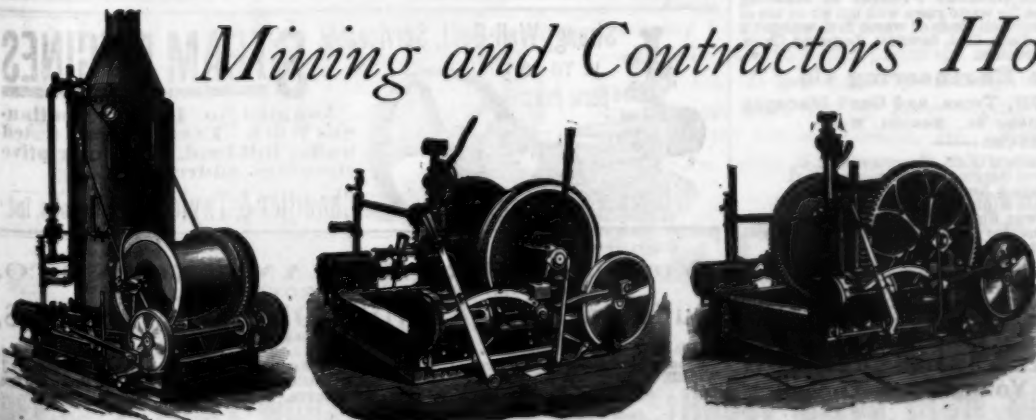
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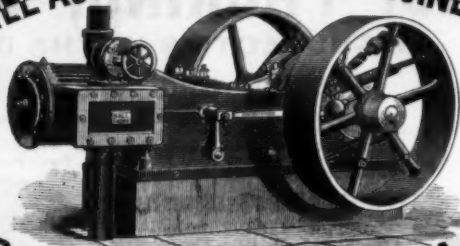


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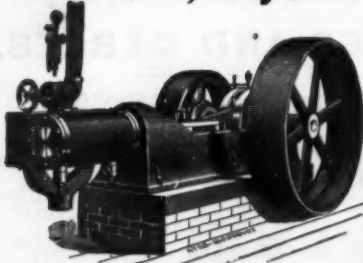


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**ENGINES and BOILERS**

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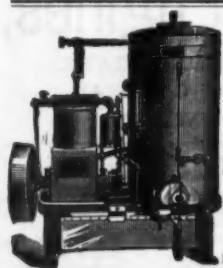
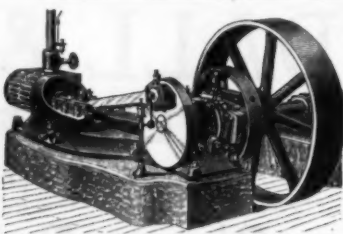
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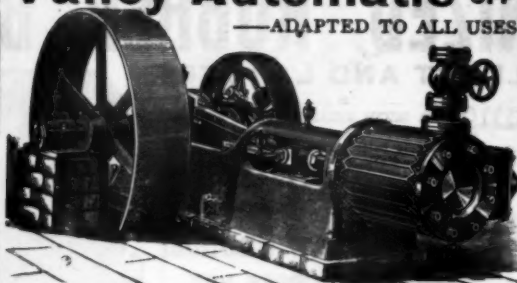
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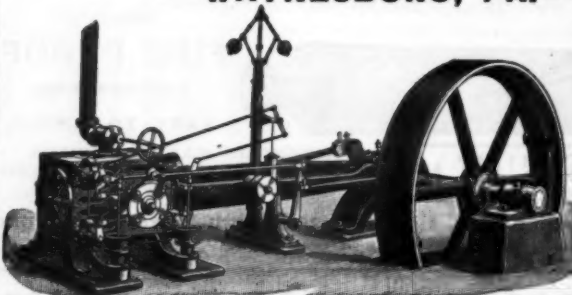
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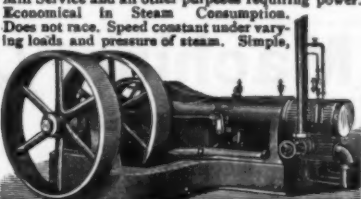


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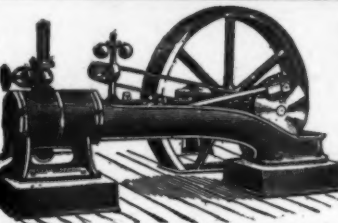
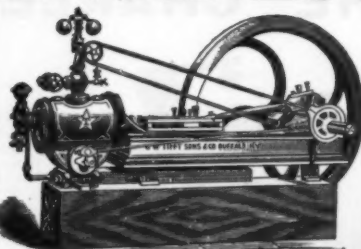
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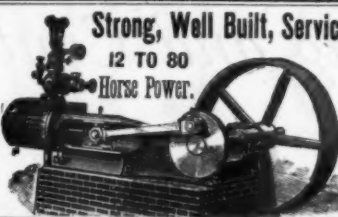
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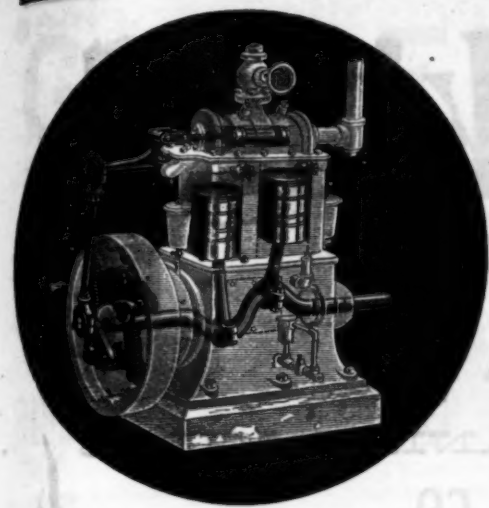
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Mark the second great advance in Steam Engineering, and represent the Highest type of  
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From 1 to 500 horse-power; Portable and Stationary, Horizontal and Vertical. Boilers of plain tubular type, locomotive fire-box pattern, vertical and two-flue, steel or iron, as desired. Engines, Plain Slide Valve or Automatic Cut-Off. Send for catalogue, giving exact requirements, that you may obtain our estimate. Freight paid your station if desired.

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Horizontal, Vertical and Locomotive Boilers.

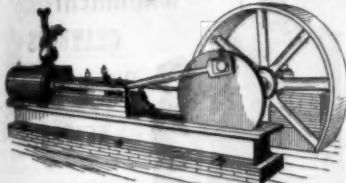
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Send for Catalogue. — WILMINGTON, DEL. —

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These engines are made in the best manner and for hard service, and for those situations where a side crank is most available. In ordering state whether a right or left engine is wanted.

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CORRESPONDENCE SOLICITED.



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## THE EBERMAN BOILER FEEDER

Is the Best and Most Reliable for Feeding Locomotive and Stationary Boilers.

**CORRECT** in Principle.—Positive in Action.—**CANNOT FREEZE.** Simple in Construction and Operation. Is made of the best material. Only one handle to operate. Each Feeder is thoroughly tested to work from 15 to 150 pounds of steam without any adjusting. All we ask is a trial. Sold by dealers generally.

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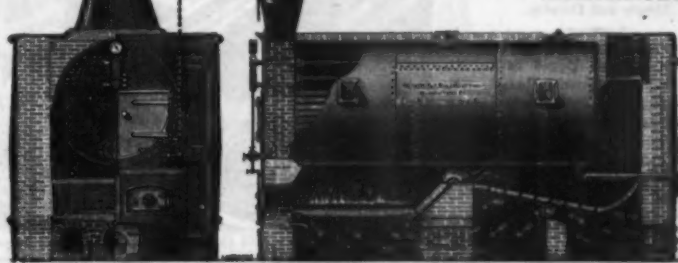
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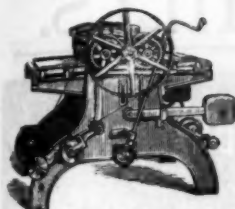




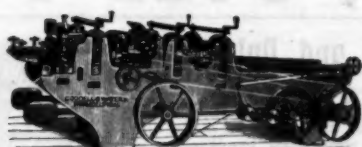
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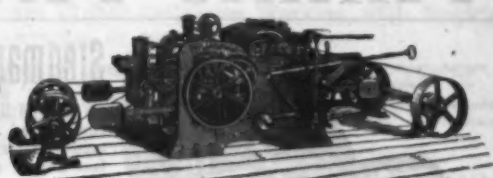
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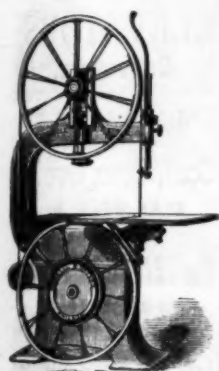
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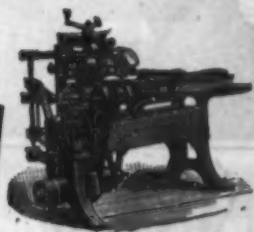
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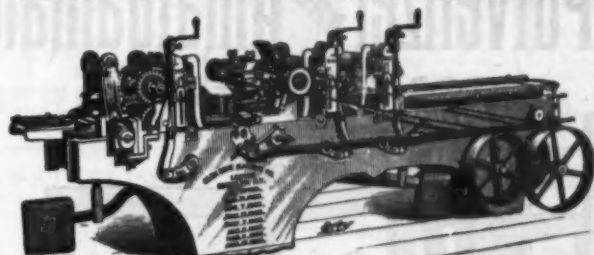
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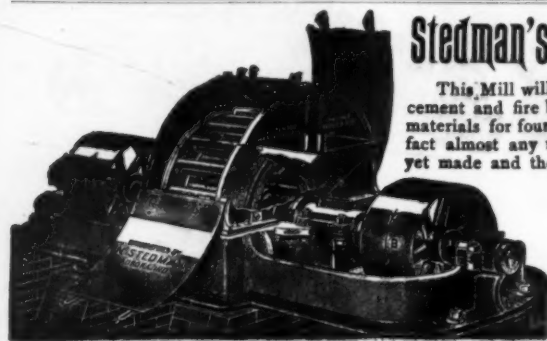
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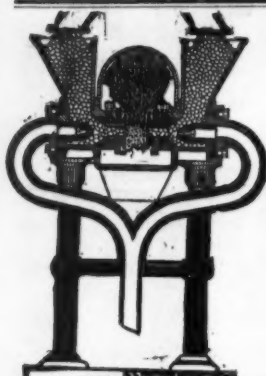


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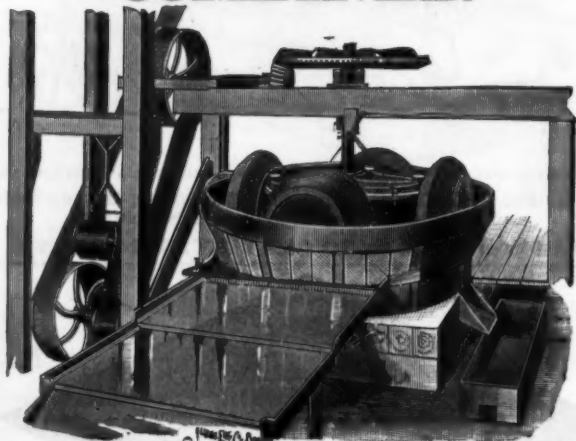
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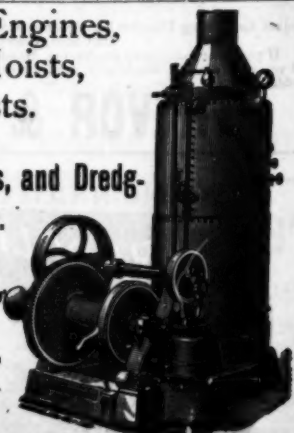
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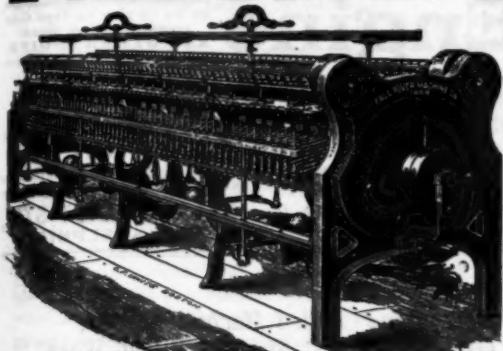
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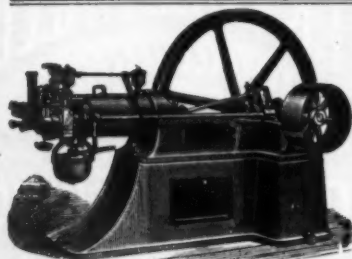
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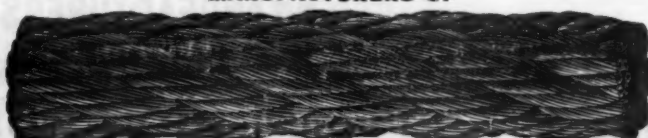
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PUBLISHED EVERY SATURDAY BY THE  
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IF you contemplate starting a new enterprise of any kind, whether it be a railroad, an iron furnace, a rolling mill, a machine shop or foundry, electric light, water or gas works, saw mill, planing mill, furniture factory, fertilizer factory, cotton mill, or anything else requiring machinery of any description, send particulars to the MANUFACTURERS' RECORD. A postal card giving character of enterprise and kind of machinery wanted will be all that is needed. It will prove of great benefit to you.

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

THE prospects are favorable for carrying out some great deals for the development of Anniston, which, if fully consummated, would, according to one of the most conservative men there, "create a greater activity and a bigger boom than even Birmingham ever had." From intimations received as to what these deals are, we feel safe in saying that this statement is probably correct. Even if only a part of these schemes should be successfully carried through, they are of such great magnitude that the effect would be surprising. The consummation of these plans in their entirety would, we believe, be the greatest move ever made at one time for the development of any city in the South. It is said by those who are engineering this move that the prospects are favorable for an early consummation, and we trust that this is true. The success of this deal would cause very heavy investments of Northern capital in Anniston, and thus do the whole South good.

THE Richmond & West Point Terminal Co., now operating about 4,497 miles of railroad and 200 miles of water lines, have leased the East Tennessee, Virginia & Georgia Railroad, adding to their system 1,624 miles more of road. In addition to this the Terminal Co. have secured control of the properties of the Central Railroad & Banking Co., of Georgia, comprising over 2,200 miles of road and 300 miles of water lines, making their system, as far as mileage is concerned, possibly the largest in the United States.

## To Southern Railroad Managers.

Your enterprise in the past is worthy of all commendation. You have been beyond controversy the chief factors in advancing the prosperity of the New South. Whenever expositions have been held you have made such low fares that people from near and remote places were able to attend them at a minimum of cost. You have also established excursion rates to the chief summer and winter resorts. You have sold time tickets on which Southern people might visit the North in summer, and the denizens of the colder zone might escape its rigors and enjoy the more genial climate of the South Atlantic and Gulf States. Within a week you have given another instance of your liberality and good judgment by announcing through your official representative, the Southern Association of General Passenger Agents, that the time of limited tickets sold to Floridians had been extended indefinitely. This was a merciful and just act for which you will receive due credit, not only from Florida's afflicted people, but from the entire country. So far you have done splendidly.

But there is a step in advance the people of all sections hope you will take. The MANUFACTURERS' RECORD knows it will be attended by difficulties, but believes that if you address yourselves seriously to the subject, you will be able to surmount them. The one thing needed is the issue of excursion tickets for every day from the first of November to the first of March, inclusive, good for sixty days. These tickets should be on sale at all your Northern agencies. They should permit the buyers to stop over at all principal stations of the roads in the Southern States over which their tickets give them the right to go. You may guard them by whatever restrictions your wisdom may suggest to keep them from falling into the hands of "scalpers," but do not fail to provide them.

Why does the MANUFACTURERS' RECORD urge this upon your attention? For two reasons: 1st. For the upbuilding of the South. 2d. For your own present profit and future continuous benefit.

This paper has an immense correspondence with the people of all sections of the United States who have learned to regard it as the intelligent and unbiased representative of the South as a whole, and not of any State or section. This correspondence during the past six years has shown an ever increasing desire among Northern people to locate somewhere in the South. Where to go they do not know, but they wish to see the country and select their locations. It may require one, two, three or half a dozen trips before they decide. The majority of these people are deterred from such journeys by the local rates of Southern rail-

roads, which are much higher than they are accustomed to pay. The cost of limited through tickets from the North to the Southern cities are not objectionable, but they do not afford the needed facilities. People going to seek a new home wish to have the same facilities from Southern that they obtain from Western railroads. Certainly there can be no insuperable objection to meeting this wish.

For a year the MANUFACTURERS' RECORD has had trusted members of its staff investigating this subject. They report that fully 50,000 Northern families are anxious to move to the South, and will do so within a reasonable period after they or their representatives have had the opportunity to go and examine the country and select their locations. The majority of these people are farmers and market gardeners, but others are mechanics and tradesmen. Few of them are wealthy, but none are poor. They would average from \$2,000 to \$3,000 cash to the family. They would, from the dates of their respective settlements, become both producers and consumers. Every one of these families, when comfortably settled, would attract others to the same locality. Is not the business to be derived from these would-be-settlers worth striving for? Certainly the South thinks so. It has spent much money and done much in other ways to attract them. But recently a car laden with Alabama exhibits has made a triumphal tour through the Western States and created a wide interest in that State. The exhibitions made in Boston several years since by the Seaboard Air Line, the Richmond & Danville and other railroads, and by North Carolina and Tennessee, have given the South many settlers and very large investments of Northern money. Their effects are more manifest now than they were at the first in the great increase of inquiries from New Englanders, and the greater volume of their capital going into the South.

The MANUFACTURERS' RECORD earnestly presses these considerations upon your attention, because the time has come for a new departure. The blizzards of last winter are not forgotten. Thousands of people who endured their rigors are looking longingly Southward. It is for you, the managers of Southern railroads, to determine whether you will not find it advantageous, both immediately and for the future, to meet the reasonable requirements of these would-be settlers.

A COMPANY with a capital stock of about \$50,000 has been formed at Atlanta, Ga., to build at once works for manufacturing all grades of stoves.

ADVERTISERS wishing to reach the manufacturers of all classes, mining companies, steel, iron and hardware dealers of the entire South, cannot find a better medium than the MANUFACTURERS' RECORD.

## Prepare for 1892.

Congress has adjourned until next December, leaving undone some things that should have been finished, but that is always the case. One of the most important of these omissions was the bill to provide for a permanent exposition of the three Americas at the national capital in honor of the four hundredth anniversary of the discovery of America. This bill had been favorably and unanimously reported by the House Committee on Foreign Affairs, and there was no opposition to it in either house of Congress. It will undoubtedly pass next winter, and be followed by early action by the President and the State legislatures. It is a pity that the measure was not completed, because many legislatures that meet only biennially will assemble next January, and should there be further delay they may adjourn without making provision for the participation of their States in this great historic and patriotic celebration.

While the people of the entire Union have a profound interest in the success of this exposition and will enter heartily into the preparatory work, it will have a more abiding effect upon the fortunes of the South than of any other section. When once those States have arranged their exhibits they will thereafter contribute to them frequently, until in time they will be complete illustrations of their respective natural resources and of their industrial and social progress. The hidden wealth of the South will not be known in our generation. All now engaged in investigating Southern resources are like explorers of unknown regions to whom each day something new is revealed. The wealth of fairyland had no such wondrous magnitude or such varied forms as that stored in the South. A century hence posterity will have learned much more of it, for every year will contribute to the general fund of knowledge acquired by development. Our duties lie in the present. The practical work of the past few years has stimulated investigation, and the profits acquired in this work have attracted the attention of the civilized world. The call for information from all quarters is increasingly earnest. It can be answered so readily in no other way as by that of a permanent exhibition at the national capital. The natural resources of the South, grouped by States and tastefully arranged, guarded and vouched for by custodians representing the national authority, will be examined by Americans and foreigners alike, not only during the anniversary year of 1892, but in all that follow them, until the South shall have reached the fullness of its development.

For this great display every legislature in session next winter should make ample financial provision. There will be none too much time for the work of preparation, and money should be furnished liberally for its accomplishment. What the States did at the New Orleans Exposition was an illustration of what they must do on a much more elaborate, extensive and costly scale for the three Americas Exposition of 1892.



### Paris Next Year.

The whole South ought to be represented at Augusta this year, for it is the only exposition to be held that will draw capitalists to it. But there are good substantial reasons why every Southern State should at once begin preparations to be represented in Paris in 1889. Some of these are well stated in the following editorial clipped from the Baltimore American:

France is the only republic besides our own entitled to be placed among powers of the first-class. She is encompassed on all sides by monarchical systems which do not attempt to disguise their hostility, and which are a perpetual menace to her stability. In their official capacity they have refused to recognize the exposition, giving as an excuse that it is to celebrate an event inconsistent with the ideas of government which prevail in their respective countries. That this is a mere pretence, and that the refusal proceeds from more unworthy motives, must be evident when it is borne in mind that all of these governments were represented at the Centennial in Philadelphia. This plea is especially exasperating coming from England, and the people of Great Britain have determined to repudiate it and at the same time rebuke the Tory government by a remarkably complete and elaborate display of British industries and arts. Other European peoples have determined, with singular unanimity, to disregard the silly snubs of their respective governments and contribute their quotas to the success of the exposition.

Here in America the feeling, as always, can only be one of true sympathy and friendship. When the colonies were engaged in a desperate struggle with Great Britain, France rushed to their aid with men, munitions and generals, and no figure in the Revolution commands more genuine esteem or more entirely possessed the confidence of Washington than La Fayette. The latter's experiences in this country afterwards contributed greatly to the release of his own people from bondage. The relations established between the two countries by La Fayette and his companions have continued to the present moment with scarcely a ripple to disturb them. If the United States were called upon to interpose between France and any European country, it would be manifestly bad policy to do so. Washington, with all his love and sympathy for the French, strongly advised his countrymen against entangling alliances abroad.

But here, where our people are only asked to give their moral and material support to an enterprise which in its very nature tends towards peace, and which marks the beginning of a train of events which, like our own Fourth of July, has resulted in the freedom of a grand and sympathetic nation, we should respond heartily and without reservation. No nation on earth can make a more varied and interesting display than the United States, and none of the great world's exhibitions have better repaid exhibitors than those held in Paris. There is an atmosphere surrounding the locality and a *savoir faire* among the people which insure the absolute success of such an enterprise, so that both sentimental and business considerations make it proper for our government and people to do all in their power to promote the exposition.

There are other and cogent reasons why the South should be represented at this international exposition. First, and most important of all, is the fact that Europeans as a whole know nothing of the sub-divisions of the United States. It is questionable whether there can be found in Great Britain or on the continent a single person (except among those who

have visited this country) who knows the names of the thirty-eight American States. Among the most highly educated there are but few who can say accurately where any State that may be named is located. Foreigners know us as the United States, our people as Americans; beyond that their knowledge does not extend. Of our different climates, and our varied agricultural, forest and mineral products, they know nothing whatever. While their people of means and enterprise are going to Canada, to Central and South America, to Australia, to the isles of the sea and to Africa, to seek opportunities for profitable investments, comparatively few come to the United States, and a much smaller number to the South.

The North and West have been flooded with the toilers, the mendicants and the vicious of European nations. The South has had few of the former and, most fortunately, none of the last two classes. Her broad domains are open to the industrious, intelligent and virtuous of every clime and nation. The vine dressers and silk producers of France, Germany and the Mediterranean nations, the skilled artificers of Europe, the sturdy yeoman of Great Britain, would find within her borders a warm welcome, and far better opportunities for engaging in their accustomed industries than exist in the North and West. The money they carry to far distant countries could be employed to better advantage in the South. But, unfortunately for them and for the South, they know nothing of these things. It is time they were told, and Paris will give the opportunity.

The States must do this. In every one there is a department of agriculture, thoroughly organized, to which the duty of making a representation of its resources should be delegated. In preparing for the Louisville, Atlanta, New Orleans, Richmond, Augusta and more local expositions, all have accumulated the materials for making elaborate displays. These can be largely increased. During the coming fall and winter most of the Southern legislatures will be in session and can grant the necessary powers and provide the funds.

When three years since there was an adroit attempt made by some speculators to induce the Southern States to send exhibits to an alleged "American Exposition in London," the MANUFACTURERS' RECORD opposed the scheme, and the result justified its course. This time there is every reason for approving of the proposed exposition. It is under the auspices of a friendly nation. It has been indorsed by Congress and the national government. It is to be held in that city to which every preceding exposition has attracted throngs of people from every civilized nation under the sun. Nor is this all. The peculiar circumstances under which this exposition will be held will prove a special attraction to

all Europeans who are opposed to monarchical institutions, and who earnestly desire to live in a republic. To all such exhibits from our Southern States would be of exceeding interest. That an inspection of them would be followed by visits to the South and by the immigration of a multitude of desirable citizens we firmly believe. Such being the case, we urge our Southern friends to immediately begin preparations to be represented at Paris next year.

### The World's Future Fuel.

Some of the leading journals of the day have recently been speculating on the probable exhaustion of anthracite and other coal in the United States, assuming also that the world's supply of coal must be chiefly obtained from this country. We have been looking up the subject and find that there are large bodies of undeveloped coal territory in the Netherlands, Switzerland, Sweden, Denmark, Germany, Bohemia, Siberia, Hanover, amounting to 59,000 square miles, and Russia with 22,000 square miles. The Island of Formosa can furnish 10,000 square miles of coal. At Peking there are seams of coal 95 feet in thickness. Large coal territories abound in Austria, Spain, Southwest Poland, Portugal, Italy, Greece, Turkey, Persia, amounting to over 39,000 square miles, to which we may add 35,000 square miles for India and 400,000 to the credit of China. Japan is capable of furnishing 6,000 square miles. Then we take the Falkland Islands, Patagonia and Peru, where there are very extensive deposits of coal. Most of the southern part of Chili is a vast coal field. Then comes Brazil, an immense empire, having coal beds from 17 to 25 feet in thickness. In the United States of Colombia there is cretaceous coal of fair quality, and bituminous beds far beneath the surface. Then we must make a note of Mexico, Vancouver's Island, New South Wales, the latter 25,000 square miles. To these we add Queensland, Victoria, Western Australia, good for 14,000 square miles. New Zealand can furnish 29,000, and then we have not counted on Tasmania, New Caledonia, Natal, Alaska and still other undeveloped parts of the world, making an addition of at least 100,000 square miles.

It must be remembered that all the carboniferous areas enumerated are undeveloped and known only to geologists. We do not mean by this that geologists are wiser than other people, but such matters come within the line of their profession, and geology is a study of such colossal magnitude that very few persons give it any attention. In this estimate we have not included any of the working operations of the world, nor any coal lands in North America excepting Alaska and Mexico, nor have we delved into the carboniferous strata of Africa. It will thus be seen that the world's future supply of fuel is not likely to be exhausted within the next 100,000 centuries.—*Altoona Times*.

BUSINESS at the South is again moving along with its accustomed regularity at nearly all points. There are still a few breaks in transportation lines, and a few manufacturing concerns have closed for a time, but no furnace has blown out, no spinning mill, rolling mill or foundry has closed. Except in rare instances building operations have not been affected, and merchandise is moving briskly. It is anticipated that while the fall trade will be a little later than usual, it will be large in volume.—*Stoves and Hardware, St. Louis, Mo.*

**IF** you are not already a subscriber to the MANUFACTURERS' RECORD, send us \$4 and you will receive it regularly for one year or six months for \$2.00.

### Shall the Building of Railroad Cars Be Diminished?

"Will not the business of building railroad cars soon be overdone?" This question has been asked by a conservative subscriber who has read much recently about the construction of new and the enlargement of old car works. Probably many not familiar with the business have felt the same fear that our friend's question implies. It is easily answered. New railroads have required large outfits of rolling stocks, but nothing like the number that their construction has compelled other lines to buy. A new railroad 100 miles long, if it had no connection with other roads, could determine accurately how many cars would serve its purpose, but the moment it sends one of its cars beyond its rails it loses its use for a longer or shorter period. The general adoption of the standard gauge track has led to a wider scattering of cars than was once possible. A car loaded at New York may go then to Galveston before it is unloaded. Then it will be filled with freight to some other place, possibly in California or New Mexico, and, reaching that destination, the same process will be repeated, and so on indefinitely. This illustrates the system that obtains all over the country. The Cleveland Leader, commenting on this subject, says:

The recent failure of the per diem car charge and the complete return of all lines to the mileage system of rental for foreign cars diminishes the chances of a road keeping its own cars, for the cost to other lines of retaining them is less. When a car now once leaves the line of road that owns it, it never returns until loaded and is often detained for months for local business. Southern roads from their greater needs "steal" more cars during this season than their Northern neighbors. Let a car once get beyond the Ohio river and it is useless to hope for its return until spring. General managers may promise to return it promptly, but once in the Southern service it successfully eludes all efforts for recapture, and the owner must content himself with the mileage. A car tracer recently went after one of his missing cars and found it at last down in a remote corner of Texas, where the enterprising borrower had converted it into a station-house for a new town. A postoffice was established in one end and a country store in the other. It required considerable diplomacy to oust the tenants, but the car tracer finally won his point. Under the mileage system the possessors had no rent to pay.

When to this temporary loss of cars is added that of wear and tear, it will be seen that the railroads throughout the country must be continually adding to their rolling stock. In a recent interview in Chicago, President Depew, of the New York Central road, said that the business of the country was increasing in volume so rapidly that the transportation companies found it almost impossible to get as many cars as were needed to handle it, and this complaint is general. One railroad official recently said that the new freight and box cars turned out daily from all the shops in the United States scarcely equalled the number sent to the repair shops. For these reasons we think that there is no danger that the business of building railroad cars will be overdone. If there is any at all, it is that the demand for rolling stock will exceed the supply.



## Louisville's Prosperity

The Wonderful Future of Kentucky.

BRANCH OFFICE MANUFACTURERS' RECORD,  
LOUISVILLE, KY., October 20, 1888.

The rapidity with which the city of Louisville is growing is most remarkable, even to one who has been observant of the magic growth of the number of cities in the Gulf district that scarcely existed eight or ten years ago, and yet which are now centers of production of enormous values and are originating freights that support immense railway systems. It is not too much to say that there is not a city in the United States where the evidences of enormous increase of population are more apparent than in Louisville. Portions of the city which were two years ago corn-fields have suddenly been covered with magnificent residences, and streets which were mere country roads are now fashionable thoroughfares through which a great stream of population pulses all day. In the spring of 1887 there were 124 miles of street railway in the city, while the census of mileage taken last month shows this to have been increased to 151 miles, a growth of nearly thirty miles in little more than a year. Noticeable among these new lines is an electric system operating through the center of the city from east to west, which has just been completed, and upon which cars will be in operation within the next thirty days. The motors to be used are storage batteries, similar to those which have been tested in New York city with satisfactory results. The street car system of Louisville is a marvel to the stranger, and it is not too much to say that nothing like it can be found in any other large city. The franchises are freely given to the two companies controlling the various lines, and they are therefore enabled to operate them at less expense than in cities where franchises are given out to the highest bidder. The consequence is that fares here are at the lowest notch and the systems of transfers is so universal that one can ride from a given point in the city to almost any other given point for one fare of five cents. This, as much as anything else, has had a very important influence in keeping down speculative values in real estate, and it is possible for a householder to buy ground for a home in Louisville at one-third of the cost necessary in any other city of equal size. Residence property which in Cleveland or Buffalo or Cincinnati would sell for from \$300 to \$500 per foot can be purchased here for from \$60 to \$200, and there is abundant ground for residence purposes near the heart of the city which can be purchased as low as twelve and fifteen dollars. The number of poor people who own their own homes, and the large proportion of very handsome and elegant residences that are building in all quarters of the city, are speaking proofs of the advantage that accrues to the population generally from cheap real estate conveniently located with regard to urban transportation.

In railway growth Louisville has surpassed all previous records since 1887. Three months ago the Louisville Southern, traversing a magnificent section of Bluegrass country southeast of Louisville and connecting with the Cincinnati Southern at Harrodsburg, 90 miles from the city, was completed, and is now actively in successful operation. The completion of this road was of vast importance in giving Louisville a third competing line to the South, the other two being the Louisville & Nashville Railroad and the Chesapeake, Ohio & Southwestern, a part of the Huntington system. Over the Southern the merchants and manufacturers of Louisville can reach every important point in the whole Southern district heretofore reached only over the Louisville & Nashville, and the Southern system is being rapidly extended and will ramify throughout the mineral

and timber regions of Southeastern Kentucky, besides reaching a dozen of the most thrifty and important towns in the Bluegrass region that were heretofore tributary to Cincinnati.

Hardly has the celebration of this important fact died away before the announcement is made that the Louisville, St. Louis & Texas Railroad will be opened for business by November 1. This is a magnificent line paralleling the Ohio river westward from Louisville, and which will give this city still another line to the Southwest. It passes through a very rich country along the river, and connects Louisville with at least two very important cities that have heretofore been nearer St. Louis than to their own State metropolis. It will thus be seen that Louisville is steadily enlarging her territory and drawing to herself centers of wealth and consumption that have heretofore been commanded by her commercial rivals. This is one of the most convincing proofs of the extraordinary activity that has pervaded the city, and has radiated to every point of the State of Kentucky. Cincinnati, which ten years ago was regarded as a young giant of enterprise, spent more than 20 years considering the importance of building the famous Cincinnati Southern Railroad, although it was a vital necessity to preserving the commerce of that city, and when, after this 20 years of dallying, the road was finally completed, it was hailed as an extraordinary achievement. Since that line has been completed Louisville has added four distinct new through railroad lines to the South, and one of these gives to the city, without a single dollar of cost to the public treasury, every advantage which the Cincinnati Southern brought to Cincinnati at a cost of more than \$20,000,000.

There are now three new railroad projects attracting attention here which will do more to develop the State of Kentucky and enlarge the importance of Louisville than anything else. Two of these roads are now in the hands of contractors, and track-laying is being pushed as rapidly as possible. One of these is the Kentucky Union Railway, and will connect with the present local system at Lexington, which will extend to Breathitt county, the center of the mineral and timber region of Southeastern Kentucky, a distance of 100 miles. It has long been known to geologists and those interested in the coal industry that Breathitt county contains the largest and the most valuable field of pure cannel coal known, not only larger than any known in the United States, but larger than any other in the known world. Cannel coals are found in 16 of the counties in the eastern coal field, and Breathitt is fairly in the center of this extraordinary deposit. The analyses of some of the cannel coals found in Breathitt show these remarkable results:

Vol. com. matter, per cent.	Fixed carbon.	Ash.	Sulphur.
53.80	39.46	5.54	.798
41.10	46.70	11.30	1.180
48.22	44.34	4.76	.78
66.08	29.73	3.64	.83

For purposes of comparison analyses from some of the other celebrated cannel coal are given:

	Vol. com. matter.	Fixed carbon.	Ash.
Kirkless Hall, England..	40.30	55.40	3.30
Boghead, Scotland.....	51.60	15.70	32.70
Leahmago cannel.....	49.60	41.30	9.10
Peytons, West Virginia..	45.00	41.00	13.00

It will be seen that some of the Breathitt coals excel the most celebrated coals of Great Britain. When the Kentucky Union has penetrated this region these cannel coals will find a market all over the country for domestic use and for the manufacture and refining of gas. Cannel coal for the latter purposes has been for some years shipped from Breckinridge county, Ky, to London and Liverpool, and yet the Breathitt coal is far superior to the Breckinridge coal. In fact, the Breathitt cannel coals have been pronounced by chemists to be the purest known in the world.

In addition to these facts making the new line important, the Kentucky Union pene-

trates the very center of the whole Eastern Kentucky coal field, which is more than 10,000 square miles in extent, and which contains 1,650 feet of coal measures and nine distinct beds of coal of workable thickness. The coal field is covered over with the largest virgin forest of fine hard woods remaining in this country. The importance of the Kentucky Union enterprise is greatly enhanced by the fact that the lands along the route have been purchased by a very wealthy syndicate, who are now making their arrangements to found towns and to actively develop the various industries for which they can produce so many raw materials on the spot. The contract for the completion of this road comprehends the opening of the system by the middle of June, 1889, and in the meantime the land syndicate are preparing to establish mills for developing their lumber interests at once and vast sums of money will be invested in this direction. The company have very advantageous rates and can reach the Eastern market with lumber at from \$25 to \$30 per car less than the same freights can be carried from any other point in the South where the supply is adequate to the demand.

A second project of great importance is an extension of the Louisville Southern from Richmond, in the heart of the Bluegrass region, southeastward to the Kentucky river, and to the head of navigation on that river at Beattyville, or what is known among coal and timber men all over the country as the "Three Forks of the Kentucky." This line, which is some seventy miles in length, will be completed in about twelve months, and ground was broken last week and the contractors are now busy with a large force of workmen. Counties along the route have subscribed about \$1,000,000 to the work, and the undertaking is backed by the same remarkable energy which built the Louisville Southern. Both the extension of the Southern and the Kentucky Union will meet at Beattyville, the Kentucky Union pushing thence southeastwardly to Breathitt county, with the ultimate object of crossing the Cumberland mountains through Pound Gap and uniting at Big Stone Gap in Virginia with the Norfolk & Western, the Louisville & Nashville and other roads that are building to that point.

The third railroad project is the building of the Louisville, Cincinnati & Dayton, north of the Ohio river, but which will be virtually a Louisville line, since it will divert an immense amount of Eastern traffic destined for the Southwest through Louisville instead of, as heretofore, through Cincinnati. It is understood that the same company projecting this road are builders of the Louisville, St. Louis & Texas, and that the whole system is a part of the Vanderbilt system, constructing to provide a southwestern outlet for that great system.

When these roads are completed, and there is little doubt that they will all be in operation by 1890, it will be found that Louisville has added nine railroads to her transportation system within ten years, or at the rate of nearly one new road per annum. It is doubtful if there is any other city either in the West or South that can show such a remarkable record of development.

### NOTES OF PROGRESS.

The Commercial Club reports a net increase of 383 new business enterprises in Louisville during the past year.

The commercial business of the city has been larger this fall than ever before in history, notwithstanding the yellow fever scare and the temporary paralysis of Southern business.

The celebration during the month of September of the great increase in industrial enterprises drew large crowds from all over the South, and for weeks Main street has been well-nigh impassable from the accumulation daily of packing cases.

The Commercial Club, which now numbers about 800 members and is one of the most active organizations for good in the

Union, is taking steps to provide for the erection of a great music hall, which will, possibly, be united with the Polytechnic Library and Art Collection in one splendid building. Mr. Geo. H. Moore, who has a private collection of paintings valued at \$50,000, has offered to contribute the collection if the enterprise is carried out. A strong committee of active young men have the plan under consideration.

The Kentucky Rock Gas Co., which was organized for the piping of natural gas from the fields in Meade county to this city, have made a contract with Pittsburgh parties to lay the pipes. The gas wells are but 26 miles from Louisville, and there is an apparently inexhaustible supply. At present there are about 30 wells in operation, and the quality of gas obtained analyzes well, being much superior to the Pennsylvania or Ohio product. The Kentucky gas is almost pure enough for lighting purposes without refinement.

James G. Givens is negotiating with an English syndicate for the investment of several millions of dollars in Southeastern Kentucky, and he leaves for Liverpool next week to close the matter. The advent of the American Association at Cumberland Gap has made English capitalists anxious to invest in Kentucky.

There are three important new theories in the conversion of iron into steel that are attracting considerable attention here. They are all the inventions of local mechanics, and two of them have been patented, while the third is thus far merely a secret. It is not improbable that in a short time malleable iron and steel works will be established for the specific purpose of testing one or more of these new processes for the purpose of ascertaining how cheaply edge-tool steel can be made and put on the market.

The last statement of population shows 213,540, an increase of 73% per cent. since 1880, when the population was only 123,758. The suburbs of New Albany and Jeffersonville have also been growing rapidly, and at present the population massed at Louisville is considerably more than a quarter of a million.

THE following letter from the Egan Co., of Cincinnati, Ohio, manufacturers of wood-working machinery, is but another proof of the value of the MANUFACTURERS' RECORD as an advertising medium:

CINCINNATI, OHIO, Oct. 17, 1888.

Editor Manufacturers' Record:

Yours of yesterday just at hand; contents duly noted. We enclose herewith our renewal with you for another year. It is with pleasure we say to you that we have had remarkable good results with your paper, and we trust that we may be as well served in the next year.

This concern do a large Southern business, and have found the MANUFACTURERS' RECORD of great assistance to them in securing that trade.

KENTUCKY GEOLOGICAL SURVEY,  
FRANKFORT, KY., October 13, 1888.

Editor Manufacturers' Record:

Dear Sir—In an article headed "Bristol's Bright Future" in the MANUFACTURER'S RECORD of October 13, a serious mistake is made in quoting from a letter written by me to Dr. J. M. Bailey. In speaking of the red fossil ore I am made to say that one bed ranges from 30 to 60 feet thick and another from 18 to 24 feet thick. This should be inches instead of feet. In the original I doubtless made the conventional sign thus 30" to 60", which led to the mistake. I will be greatly obliged if you will make this correction in your next. Very truly yours,

JOHN R. PROCTOR.



### A Plant for the Preparation of Coal for Coking.

Messrs. Heyl & Patterson, of No. 100 Third avenue, Pittsburgh, have succeeded in producing and erecting a most effective and economical apparatus for the conveyance, elevation, crushing, washing and drying of the coal for use at coke ovens. The plant, which is in practical operation and open to inspection, does its work without a hitch, and without the slightest waste of the finest slack or dust of the coal, which in the common methods is generally washed away in the process of cleansing.

This fine dust constitutes a large proportion of the fuel and the cream of it, and Messrs. Heyl & Patterson estimate that the preservation of it by their methods not only improves the quality and density of the coke, but also effects a saving of \$8,000 to \$6,000 a year in medium-sized plants. The American Manufacturer says:

"We had the pleasure of inspecting a plant

with those on elevations or details, and indicate alphabetically the respective positions of the details in plan.

The coal is brought to the works by the elevated road of the Pittsburgh, Chartiers & Youghiogheny Valley Railroad.

A bin or receptacle of iron is fixed under the track, having a shoot in the center of it emptying into a boot, fixed a little below average level of the yard. Generally only one truck at a time is emptied into the bin and right over its center in line with shoot, but the bin is sufficiently large to admit of three trucks being emptied into it at once should the trucks be urgently needed. In such a case the material that is dumped to the right and left of shoot in the bin is brought to the center by means of a worm shaft and gearing worked by means of a shaft, sprocket wheels and chains connected with the sprocket wheels worked by elevator chains.

The coal which is shot into the boot is taken up by the elevator to the pan conveyor C—see drawing—which is fixed

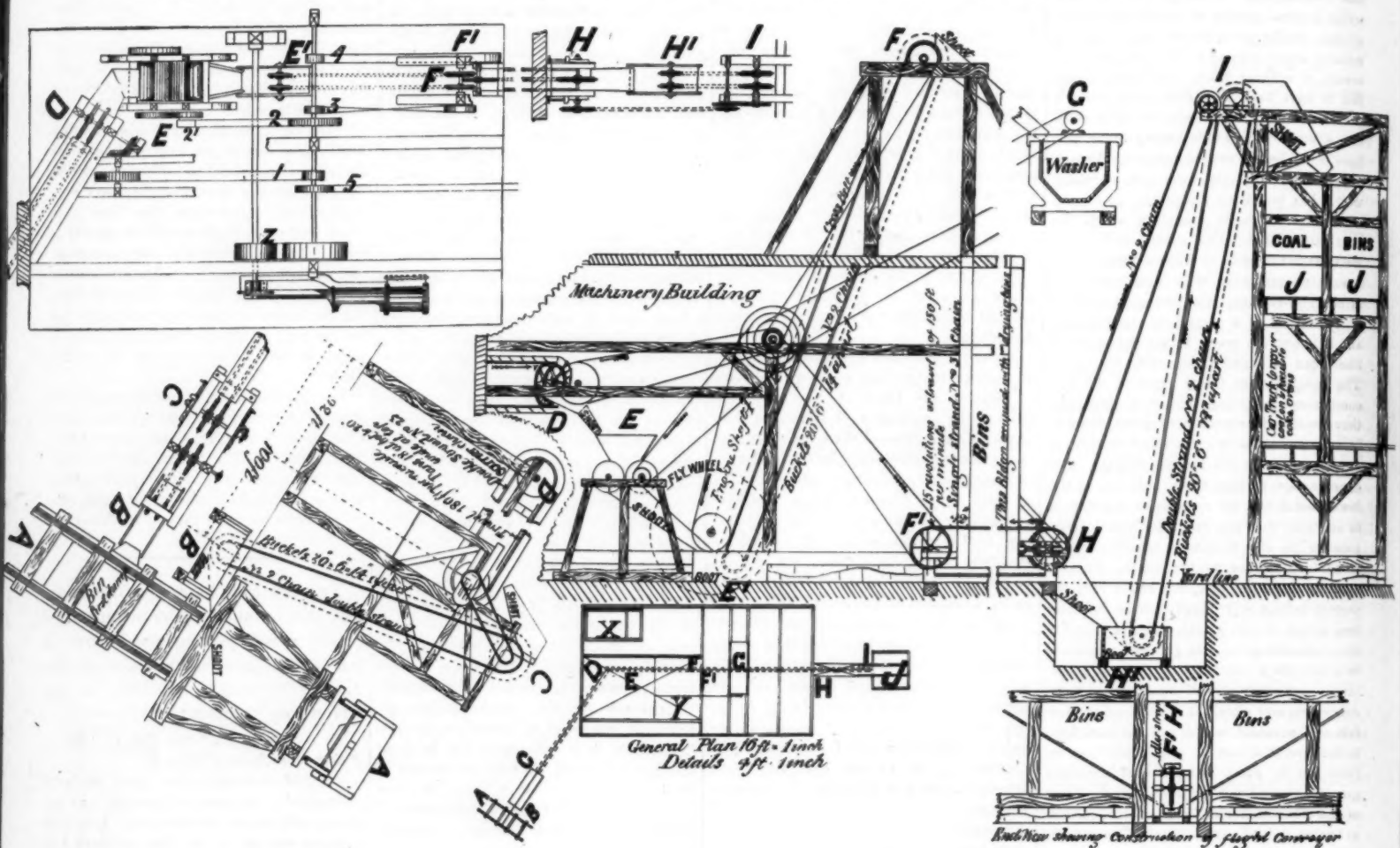
return pans run over pulleys 18 inches in diameter with 14 inches face fixed to the trestles at distances of 12 feet, center to center, at a speed of 225 feet per minute.

The pan conveyor enters the machinery building at an angle, and is worked by means of bevel gearing, sprocket wheels and chains—see enlarged plan, D.

The pan conveyor empties the coal into shoot, E, which supplies the crushers fixed on the floor of the washer house. The crushers are composed of two rollers 30 inches in diameter and 30 inches long, weighing 6½ tons—the surface of the barrels being slightly ribbed, grooved or corrugated. These rollers are sufficient for pulverizing coal run through a ½ inch screen, but with the addition of a pair of Cornish teeth crushers above—barrels with rugged projections on the surface—which the firm expect to apply, they can then take the run of the mines indiscriminately, any size that comes. After the fine coal comes out of the crushers it falls into a boot, E, see plan—and is conveyed by

is slightly below washer trough before mentioned—the bin extends nearly to the ground, being 34 feet long, 18 feet wide and 24 feet deep, built of timber stayed by iron rods. Each bin has four doors, worked by a lever outside, which let the coal on to drag conveyor. The bin is wedge-shaped at bottom.

Each washer is capable of washing 75 tons of coal a day, which the bins receive. The slate and dirt mingled with the coal, being heavier specifically than the coal, remains behind the coal on the sieve, which is shaped to effect this, and is inclined towards a receptacle on same, having inlet and outlet valves—the former being more or less open, according to the state of the coal; that is, according to the proportion of dirt and slate mingled with it. A flood of water flushes this receptacle and carries away through it the slate and dirt into a trough fixed to receive it—near the coal trough before mentioned—which runs out from building to dumping ground in the yard on the river bank, where it deposits it.



—under the guidance of Mr. Patterson and Mr. Rosensteel—recently erected by Messrs. Heyl & Patterson and Mr. Rosensteel at the Sandford Coke Ovens at Chartiers. Mr. Rosensteel is the manager of the coke works.

We were surprised and pleased to see the rapidity and facility with which the coal was elevated and transferred from place to place without the loss of any of it. The slack, after the processes of crushing and washing, indicated a uniformity and density at once appreciated by an economist.

The accompanying engraving is epitomized from the original drawing to get it within reasonable limits for insertion in the paper. Sketches of the principal parts of the machinery are grouped irrespective of their order, but have letters which correspond with the letters on the diagram plan, which show their actual relative position and order.

The diagram plan is drawn to a scale of 16 feet to the inch, and has a series of letters from A to J, which letters correspond

upon trestles at a height of 18 feet above the yard level.

The elevator, B, C, which is inclined a little out of the perpendicular—see drawing—is composed of No. 2 chain, double strand, made of patent links of malleable iron. The buckets are fixed to the chain at distances of 14 inches, center to center, and are 20 inches long and 6 inches wide, made of No. 12 gauge sheet steel. The elevator is capable of lifting and discharging into pan conveyor 1,000 tons of fuel per day (of 10 hours) at a travel of 250 feet per minute. The chains of elevator work into sprocket wheels fixed in boot and into two sprocket wheels worked by pan conveyor.

The pan conveyor, C, D, which is fixed horizontally, runs for a distance of 92 feet into the washer house. It is composed of a series of pans lapping each other, and is made flexible by being connected to patent links. These pans run on a stringer or plank on top of trestles, the links to which the pans are connected having rollers which run with very little friction. The

means of another elevator into a bin fixed at back (E F) of three washers. This hopper, which is slightly above the level of top of washers shoots the coal on the sieves of same. The washers, G, are wooden tanks containing water, covered by brass sieves, and having plungers worked by eccentrics on a shaft above, which agitate the water and force it up through the aforementioned sieves and the coal lying on them, the latter being washed and carried off the washer sieves into a wooden trough fixed by washer side to receive it. This trough empties alternately into two bins. The water for washers is contained in a circular tank outside the building, fixed at a height of 10 feet above the level of bottom of washers. The capacity of this tank is 600 barrels, and is supplied by means of a donkey pump and a 6-inch main.

The bins for receiving the washed coal are fixed on either side the drag conveyor, which is on floor level, and is situated between G and H on small plan and F and H on broken elevation. The top of bins

The coal which is dumped into the bins naturally is mingled with a degree of water, which filters through the coal and the bin bottom, which is double planked, down to the ground level, which is cemented and inclined towards a grating emptying into a sewer, which carries the water away in a completely filtered condition. The place where the sewer empties has no indications of any of the coal in the slightest degree being thus carried away. Coils of pipe, about 1 inch in diameter and 12 in number, engirdle the bins and the places below into which the water filters, and by means of the exhaust steam circulating through same, keep up a temperature above 43 degrees, and so obviates the freezing of the coal in bins or the water filtered through them.

Between the two bins, on ground level, a drag conveyor, F H (before referred to), is worked by chains and sprocket wheels—see plan and elevation, F1 to H. This drag conveyor is 34 feet long and travels 150 feet per minute, and is made of No. 8 single-strand chain, to which plates 14x44



inches are screwed at distances of 12 inches. It receives the coal from the bins through doors, before specified, and empties it into the boot, H1.

The coal is again elevated by a similar elevator (H1 I) to the two previous ones, into a shoot which empties into a bin, J, fired above coke ovens and above the larry track. Doors are provided in its bottom for letting the coal out in its finished condition into the larrys, for immediate use in the ovens.

The motive power is provided by a

band transmits the motive power to the crusher gearing by means of the band pulley on the shaft of ditto and working same; this pulley is 16 inches in diameter.

Pulley 3 (see plan) is 18 inches in diameter and 6 inches face, and has a cross 6 inch band, which works a 28-inch pulley and shaft of elevator at top; this shaft is 2 15 16 inches diameter, and has 2 sprocket wheels keyed to it 31 inches in diameter, spaced 12 inches from center to center. Sprocket wheel 4 (see plan) is 18 inches in diameter, working by means of a chain and a 48-inch

in diameter, 6-inch face, with a 6-inch band running to washer pulley, which is 18 inches in diameter and is keyed to the plunger shaft, which makes 80 revolutions per minute.

The patent links are made of malleable iron, and are shown in detail by the two bottom cuts below general drawing. No. 1 is a special carrying chain, which is so constructed that the rollers extend below the chain and run upon a plain surface. The links have flat surfaces on the top, to which pans are bolted. This arrangement



FIG. 1.—PAN CONVEYER CHAIN.

multi-tubular boiler (X on plan) 5 feet in diameter, 15 feet long, fired underneath with a back travel of the flame through the tubes. This boiler supplies the steam to a single horizontal engine of 100 horse power, 13 inch stroke, cylinder 15 inches diameter, made by Mr. John Cooper, of Ohio, which drives a main shaft 4 inches in diameter at 65 revolutions per minute.

On the main or engine shaft, a pulley Z (see plan) 3 feet in diameter is connected, which transmits, by means of a leather band, the motion to the main pulley (60 inches diameter 14 inches face) of top shafting fixed at a height of 18 feet 6 inches above the engine house level, and making 39 revolutions per minute. To this secondary shafting 5 pulleys and 1 sprocket wheel are attached, which, by means of leather belting for the pulleys and a chain for the sprocket wheel, transmits motion to the different members of the machinery. These are friction pulleys, and can be thrown off and on at pleasure. Eight-inch banding from pulley 1 (20 inches diameter) works the bevel gearing by means of a band pulley 40 inches diameter, 7 inches face, keyed to a shaft 2 7-16 inches diameter. The bevel wheels are 16.32 inches in diameter and have 37 teeth, 1 1/2-inch pitch, 3-inch face. The bevel gearing (see D on enlarged plan) works the shaft of sprocket wheels on pan-conveyer. This shaft is 2 15-16 inches in diameter, and makes 20 revolutions per minute. The sprocket wheels working pan conveyer are keyed on to this shaft at distances of 10 inches from center to center; they are 36 1/2 inches in diameter, and have a series of projections or sprockets, which work into the pan conveyer chain. The sprocket wheels at other end of pan-conveyer are similar to those just described, but the shaft of the latter is projected, and has a sprocket wheel 16 1/2 inches in diameter, (C on elevation and plan,) which, by means of a chain and a sprocket wheel 13 inches diameter, works the elevator shaft. Two sprocket wheels 31 inches in diameter are keyed on to this shaft, 12 inches apart, center to center. The elevator chain is worked by these sprocket wheels. The chain transmits its motion to two sprocket wheels 18 inches diameter, keyed on a shaft in boot. This shaft in boot is projected on one side, and has a sprocket wheel attached, which works a chain and another sprocket wheel and shaft fixed in front of bin A. This shaft has another sprocket wheel towards its end which works a chain, and the sprocket wheel fixed on the end of worm shaft before referred to.

Pulley 2 (see plan) is 40 inches in diameter, 6 inches face, and by means of a 6-inch

sprocket wheel on shaft of drag conveyer; this shaft is 2 15-16 inches in diameter, and has one sprocket wheel 36 1/2 inches in diameter keyed to it; this sprocket wheel drives the chain of drag conveyer, which has a similar sprocket wheel at its other extremity keyed to a 2 7-16 inch shaft. This shaft is projected on one side, and has a 28-inch sprocket wheel attached to it, which communicates the motion to the elevator, H I. This chain works into a 16 1/2-inch sprocket wheel at top of elevator, I (see drawing)

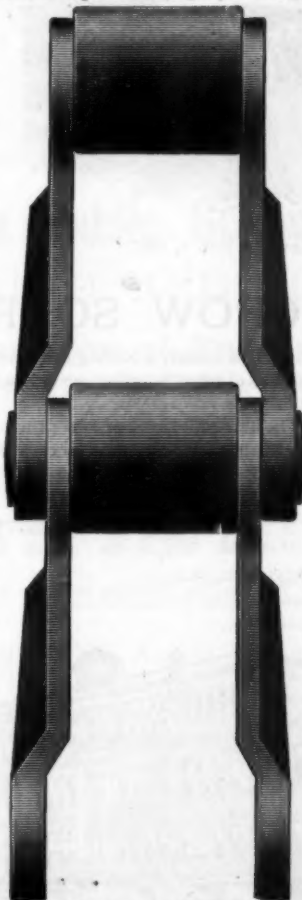


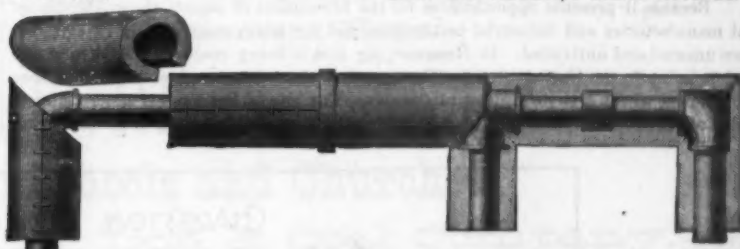
FIG. 2.—ELEVATOR CHAIN.

This sprocket wheel is attached to a 2 7-16 inch shaft, which has a cog-wheel 27 inches diameter working into another of same dimensions affixed to a shaft 2 15-16 inches in diameter. This shaft has 2 sprocket wheels 31 inches in diameter keyed to it 12 inches apart, and makes 25 revolutions per minute. These sprocket wheels work the chains of elevator, H I. At the bottom of elevator in boot the 2 sprocket wheels are 18 inches in diameter, spaced 12 inches apart, center to center.

Pulley No. 5 (see drawing) is 36 inches

permits of an enormous load being conveyed by a small power and with very little friction. The pitch of the links is 4 inches, their width 3 1/2 inches, and they are secured by a 1/4-inch steel pin. These pins are relieved from any friction or wear and tear by a projection of the link into the roller on either side.

Cut No. 2 represents chain for elevating and driving purposes, in which the roller is fixed in the middle, projecting equally above and below. The buckets are bolted to a projection on the side of the links at convenient distances. The chain used at Chartiers has links pitched 3 11-16 inches; width of link 2 1/2 inches, and have 1/4 inch steel pins. These links have projections or thimbles similar to links previously referred to, which project half way through rollers from either side, thus making the bearing and wearing surface independent of the pin—the pin being held firmly in position by a slot in the side of link which prevents it from turning and playing thus saving the wear of it. The thimble is made in such a way to give the least possible friction.



COVERINGS FOR STEAM PIPES AND BOILERS.

The rollers, which act in every instance in coming in contact with the sprocket, save the wear of both, lengthening the life of chain.

Mr. Rosensteel has applied for a patent for the process of filtering the water from the coal through the bin bottoms to below, and has made an assignment to Messrs. Heyl & Patterson of his interest."

ATLANTA can have one of the best booms next year she has had since 1880. Several large manufacturing enterprises are looking for locations here. There is no doubt, since the lease of the East Tennessee road by the Richmond & Danville, that there will be large additions to our railroad shops. Mr. Hugh T. Inman is authority for the statement that enough money can be raised on short notice to build another cotton factory. All our manufacturing establishments are doing well and some are preparing to enlarge. The Atlanta & Florida road will find some connection to Brunswick or Florida during the coming year. The Marietta & North Georgia road will be finished from Knoxville to Atlanta. All these facts indicate a prosperous year ahead of us for our city.—Atlanta Constitution.

## Covering Steam Pipes and Boilers.

Using steam pipes without covering them with a non-conductor of heat is like pumping water into a trough with holes in it; you must pump more water than is actually needed, or cover the pipes to prevent radiation of heat, and consequently condensation, and preserve the temperature of the steam, which is its vitality and strength.

Heat is the power that creates the expansive force of steam, and the loss of heat from steam pipes represents the loss of an actual amount of energy, an increased consumption of fuel and an increased cost of running the steam system, besides the unnecessary wear and tear and racking pipes, drums and boilers by sudden expansion and contraction, cost of repairs resulting therefrom and heating of buildings, adding to their unsanitary condition. Less than 15 per cent. in our best machines, of the original power, is converted into work, and the loss directly and indirectly resulting from radiation is responsible for much of this loss.

To illustrate the enormous waste, "Thomas Box," in his practical treatise on "Heat," shows that the loss from an uncovered steam pipe 4 inches inside diameter, 100 feet in length, with an initial pressure of 35 pounds, would be 587 heat units per running foot per hour, or almost a horse-power per hour. Assuming the cost of coal to be \$4 per ton, and taking the results of experiments by practical authorities, we find that the yearly waste, from radiation alone, from an uncovered steam pipe 6 inches in diameter and 100 feet in length to be \$117.90, while the cost of covering the same would not be over \$50, and would last a dozen years.

An erroneous impression widely prevails that heat insulating covering on pipes or boilers is efficient only in winter time. This is erroneous, as experiments prove that the great loss from heated surfaces is by radiation. On a body at or about the temperature of steam pipes, the loss from condensation when the thermometer is at zero is only about one sixth the loss from radiation, and this radiation, of course, goes on all the time, winter and summer alike. For instance, a heated stove radi-

ates as much heat the hottest day in summer as it does the coldest day of winter. These considerations are especially applicable to the South, where the impression has largely prevailed that covering is not needed on account of the warm latitude.

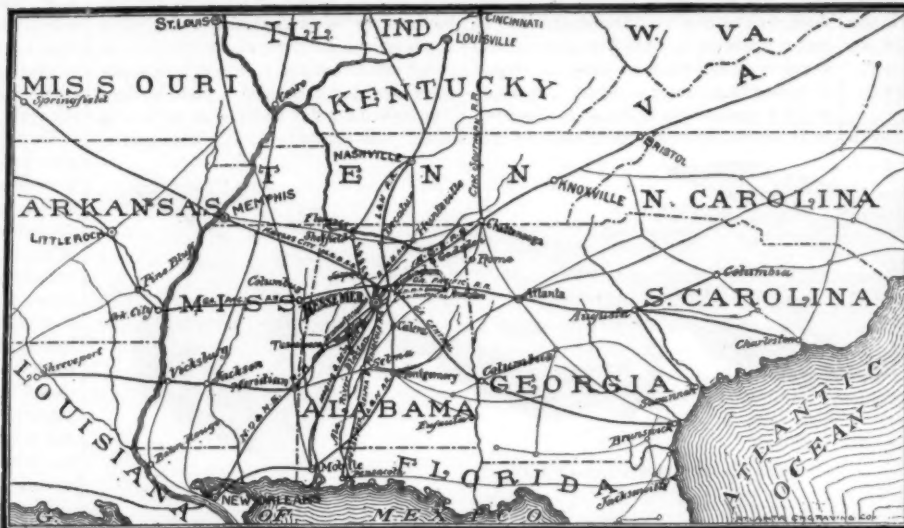
The accompanying cut shows one special variety known as Reed's sectional covering, of which there is at present more than 1,200 miles in use. This special brand and a full line of pipe-covering and asbestos goods are manufactured by John A. McConnell & Co., 69 Water street, Pittsburgh, Pa., who are prepared to make estimates for such work in any part of the country.

MANAGERS of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises, and needing machinery or supplies of any kind, will find it profitable to consult the advertising columns of the MANUFACTURERS' RECORD. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.

# BESSEMER, ALA.

## WHERE IS BESSEMER?

Located according to its latitude and longitude, Bessemer is in 33 deg. 20' North latitude and 87 deg. West longitude from Greenwich. Its position in the State of Alabama is just above its center and about midway between its eastern and western boundaries. Its position in the Southern States is a noticeably central one. It is midway between Montgomery and Decatur, between Meridian and Chattanooga, Mobile and Nashville, Savannah and Memphis, New Orleans and Louisville, all of which will readily appear from the map published herewith. So far as its geographical location is concerned it could not well be more central, more on the lines of communication and transportation between the leading and principal commercial and manufacturing centers in the South. It has lines of railway leading direct to Texas, via Vicksburg and Shreveport and via New Orleans; to Gulf ports, directly to New Orleans, to Mobile and to Pensacola; to all of the Atlantic ports and to the North, Northwest and West. No city of its age was ever so favored with so admirable, comprehensive and extensive a system of railway transportation.



## THE RAILWAYS OF BESSEMER.

In an area of four blocks, nine lines of railways center:

- The Alabama Great Southern R. R.
- The Louisville & Nashville Min'l. Line.
- The Bessemer & Huntsville R. R.
- The Georgia Pacific R. R.
- The Kansas City, Memphis & Bessemer R. R.
- The Bessemer & Tuscaloosa R. R.
- The Bessemer Dummy Line (standard gauge).

All of these lines are running to Bessemer. The Bessemer & Huntsville is completed as far as Village Springs, forty miles on the way up Murphree's Valley, with its ultimate terminal point at Huntsville. It is being rapidly extended.

The Bessemer & Tuscaloosa is completed to Woodstock, a distance of thirty miles, lacking only eighteen miles of reaching Tuscaloosa. At Woodstock this line connects with the Blocton Coal Mines Railway.

The lines of the Bessemer, Selma & Pensacola R. R. and Mobile & Bessemer R. R., now under contract and in process of construction, both center in this area.

The Sheffield & Bessemer R. R. is projected to Bessemer. It is now built as far as Jasper, forty miles northwest of Bessemer.

On the 12th of April, 1887, the first lot was sold in Bessemer; on the 15th of the following September the place was incorporated as a city, having then a population of 1,500 people. At this time, 1st September, 1888, it has a population of 3,500. It has over 400 different structures, some of them business blocks that would highly credit a city of a hundred thousand population. Over two million dollars so far have been invested in improvements. It has completed the largest rolling mill plant in the South, and two of the largest



MONTZUMA HOTEL, 194x150, OPENED NOV. 1, 1887.

iron furnaces, extensive foundry and machine shops and planing mills. Five more iron furnaces are under contract, three of them with foundations already being laid. An enormous furnace factory, machine shops and boiler works are being located, and will construct the five furnaces mentioned. An enormous fire brick, tile and terra cotta plant is being established; has already commenced the manufacture of fire brick and will regularly employ 200 hands.

## WHY DOES BESSEMER GROW SO RAPIDLY?

Because it presents opportunities for the investment of capital, the establishment of manufactories and industrial institutions and for labor, common and skilled, that are unusual and unrivalled. In Bessemer, pig iron is being made cheaper than at any other point in the United States. The iron ore, the coking coal and the limestone are almost within a stone's throw of the city. The site of Bessemer is superb, unusually attractive, unimpeachably healthy, with thorough drainage and first-class water

works. It is already a leading manufacturing point, and is destined to become one of the principal manufacturing centers in the South. Schools and Churches are already established.

The illustrations are of two structures already completed, one costing \$125,000 the other \$40,000. There are a large number of similar structures in Bessemer already completed.



CHARLESTON BLOCK, 300 FEET FRONTAGE, 2D. AVE., BET. 18TH AND 19TH STREETS.

ANY INFORMATION CONCERNING BESSEMER WILL BE PROMPTLY FURNISHED BY THE

## Bessemer Land & Improvement Company.

WM. BERNEY, President. H. M. McNUTT, Secretary.



# SHEFFIELD, ALA.

## The Iron Manufacturing Center of the South.

AT THE HEAD OF NAVIGATION, ON THE TENNESSEE RIVER, SHEFFIELD is the *natural outlet* for the mineral and manufacturing products of Alabama and neighboring States seeking a water route to points on the Ohio and Mississippi rivers, and to the Gulf of Mexico, as well as the best *distributing point* over Alabama, Eastern Mississippi and East Tennessee, South Carolina, Georgia and Florida for Northern and Western produce, groceries, provisions, machinery, &c. Three Railroads already completed and in operation, and several others assured. *Principal shops of Memphis & Charleston Railroad*, in which cars and locomotives are to be built, are under contract to be erected here. These will employ between *four hundred and five hundred mechanics*, and consequently, with their families, will make an increase in population of at least two thousand people. Shops of three other railroads are contracted to be located here, some of them being now under construction.

## FIVE COMPLETED BLAST FURNACES

Have a capacity of 700 tons pig iron per day. Experts do not hesitate to say that *iron can be manufactured more cheaply* at Sheffield than at Birmingham, and its *river transportation facilities* will enable Sheffield iron to reach the principal markets at a saving of from

**\$2.00 TO \$2.50 PER TON.**

The quality of the iron produced is pronounced by consumers to be the best from any furnace in the South. Stove Works, capacity fifty stoves per day, now in operation. A first-class daily newspaper is regularly issued. Furniture Factory, Bottling Works, Bakery, Dummy Street Railroad, a 40-inch Morse Cotton Compress, Electric Lights, Agricultural Implement Works, 3 Steam Brick Works, 2 Hand Brick Works, 2 Steam Wood-Working Establishments, Water Works, 2 Banks, a Savings Bank, and Steam Job Printing Office already in successful operation, 15-ton Ice Machine just completed and a five-story Hotel, with all modern appliances, now being erected. The Cleveland Hotel, Park House and numerous boarding houses furnish accommodations to travelers; Paint Works nearing completion. Other manufacturing establishments under consideration, among them a large Cotton Mill soon to be commenced.

**Good Water. Free Public Schools and Churches. Drainage Excellent.**

**HEALTH AND CLIMATE UNSURPASSED.**

**Splendid Opening for Men of Push and Energy. No Better Point for Profitable Investment. No "OLD FOGY" Element Here.**

**SITES FOR MANUFACTURING ENTERPRISES,**

**And for Free Public Schools and Churches**

**Donated by Sheffield Land, Iron & Coal Company.**

Population January 1st, 1887, 700; August 21st, 1887, by actual count, 2,583. Increase of population, 300 per cent. in eight months, and only limited by accommodations. Present estimate (August, 1888) fully 3,500.

Three years ago the site of Sheffield was cultivated as corn and cotton plantations, and was without a railroad. Numerous two and three-story brick business houses, and one and two-story dwellings have been, and are being erected. The class of buildings will compare favorably with those in cities of 20,000 inhabitants.

**LIMESTONE** of excellent quality for *fluxing iron* in unlimited quantities at the furnaces' sites. First-class building stone and brick clay abundant. Rich and extensive deposits of *brown hematite iron ore* within twenty miles, along the lines of two Sheffield railroads, which, by actual results in the furnaces, yield above 50 per cent. metal. Iron of high grade is being made with a pound of coke to a pound of metal—a result never before accomplished with Southern ores and coke. The Sheffield & Birmingham Railroad runs through the heart of the *Warrior Coal Fields*, which abound in first-class *coking, steam, gas and grate coal*. Timber is abundant and cheap.

The *Memphis & Charleston Railroad*, *Sheffield & Birmingham Railroad* and *Nashville, Florence and Sheffield branch* of the *Louisville & Nashville Railroad* are now in operation into Sheffield. Surveys of three other railroads have been recently completed to Sheffield, which will soon be the *best combined river and railroad transportation center* in the South.

Every merchant and every established manufacturing enterprise is doing a profitable business. *More are needed.* For further information address

WM. L. CHAMBERS, Vice-President and Manager,

**SHEFFIELD LAND, IRON & COAL COMPANY, - - - SHEFFIELD, ALA.**

# ALABAMA'S GREAT MINERAL WEALTH

SURROUNDS THE

## ★ CITY OF TALLADEGA, ★

Which, according to statistics, is the **MOST HEALTHFUL CITY IN ALABAMA**, and the County Seat of Talladega County.

THE CITY HAS A POPULATION OF 6,000, AND ITS POPULATION IS RAPIDLY INCREASING.

**T**ALLADEGA is on the main line of the E. T. V. & G. Railroad, the A. & A. Railroad, and is the present terminus of the T. & C. Railroad. Work is rapidly progressing on the Birmingham & Savannah Air Line Road, between Birmingham and Savannah, and within twelve months this road will be completed via Talladega from Birmingham to Savannah, which will place Talladega on the direct line from Birmingham to deep water on the Atlantic, making

### TALLADEGA ONE OF THE BEST DISTRIBUTING POINTS IN THE STATE.

THE CITY HAS

### AN EXCELLENT SYSTEM OF COMMON GRADED SCHOOLS,

With a scholastic population of 500, and *THE MOST COMMODIOUS AND ATTRACTIVE PUBLIC SCHOOL BUILDING IN THE STATE*. The main building is a three-story brick, slate roof structure, well ventilated, heated by steam; has accommodations and seating capacity for 500 pupils. This school is owned and sustained by the city. All branches of English literature, foreign languages, music, the sciences and art, are taught for a nominal tuition. Among other educational institutions are the following:

SYNODICAL FEMALE INSTITUTE, Property valued at \$50,000.

D. D. & B. INSTITUTE, Property valued at \$150,000.

BLIND INSTITUTE, (in course of construction,) property valued at \$150,000.

FOSTER COLLEGE, property valued at \$150,000.

No other city in Alabama has so many educational institutions and so many public buildings.

### ← TALLADEGA HAS THE MOST COMPLETE SYSTEM OF WATER WORKS IN THE STATE. →

The stand pipe has a capacity of 175,000 gallons, and into this reservoir a supply of fresh, clear, pure water is pumped every day from a large spring located in the heart of the city, which discharges over 2,000,000 gallons per day. The gravity pressure from this system is 90 pounds to the square inch in the business portion of the city. The city has broad streets, well macadamized and shaded with beautiful trees, and is well lighted with a *SUPERIOR QUALITY OF GAS*. Sixty fire plugs and forty gas lamps protect against fire and illuminate the streets.

**A LARGE FURNACE PLANT** gives employment to thousands of hands, and makes a high grade of chilled car-wheel iron from ores, limestone and coal within ten minutes haul by rail, or an hour's haul by wagon. **FOUR LARGE LUMBER MILLS**, with an aggregate daily capacity of 200,000 feet of lumber, cut from the long-leaved yellow Pine of this country. **FOUR BRICK YARDS** are in active operation. A SASH, DOOR and BLIND FACTORY, a FOUNDRY, MACHINE SHOP, FLOUR MILL, COTTON-SEED OIL MILL, and various other industries are in successful operation, and the TALLADEGA ICE CO. cools the thrifty population with pure ice at 50 cents per hundred. Another large furnace plant will be completed within the next ten months. A Spoke and Handle Factory and many other industries are projected, with a view to early completion.

Taxable property has increased 100 per cent. within the past twelve months. The rate of taxation is limited in the city charter to half of one per cent., and the city offers an exemption from taxation to all manufacturing enterprises for a period of ten years. The county of Talladega supplies more crude material, in the way of minerals and timber, than any other county in the State. Almost within the corporate limits of the city are extensive deposits of the highest grades of limonite ores, yielding 50 to 58 per cent. metallic iron, with only a trace of phosphorus, and limestone abounds in the greatest abundance. Coal is within twenty miles by rail.

THE TALLADEGA LAND & IMPROVEMENT CO. owns 5,000 lots suitable for residences, business and manufacturing, in and adjacent to the city. Lots are donated to manufacturing enterprises, and liberal inducements offered to actual settlers. SPRING LAKE PARK is owned by this company, and it is being made the most attractive resort in the State. The lake covers an area of seven acres, and is a beautiful sheet of clear spring water. Parties seeking a healthy climate, free from malaria and epidemics, and a prosperous city, are invited to visit Talladega. Address for maps, etc.

The Talladega Land & Improvement Co.,      ⇨      Talladega, Ala.



# DECATUR, ALA.

**POPULATION.**—In March, 1887, 1,200; in July, 1888, 7,000; an increase of over 500 per cent. in sixteen months.

**TRANSPORTATION.**—Thirty navigable rivers will be accessible by steamers from the wharves after the completion of the government works at Mussel Shoals, on the Tennessee river, in 1889. Two trunk lines of railroad are in operation at Decatur—the Louisville & Nashville, and the East Tennessee, Virginia & Georgia systems; and two more are in course of construction.

**MANUFACTORIES.**—There are already in operation, or nearly completed, forty manufacturing enterprises that will employ at least 3,500 skilled workmen. These will warrant a population of 20,000 in the near future.

**HEALTH STATISTICS.**—Death rate last year only 11 per 1,000 among the whites.

**IRON.**—The best grades of charcoal pig iron can be manufactured here at a cost not to exceed \$11.50 per ton.

**COAL.**—Coal for manufacturing purposes is now delivered in Decatur, by rail, for \$1.60 per ton. In a few months the mines up the river will deliver coal for about \$1.25 per ton.

**TIMBER.**—The finest timbers in the world are on the banks of the Tennessee river, adjacent to Decatur. Decatur is one of the largest hard wood producing centers in the South.

**SCHOOLS AND CHURCHES.**—Good school and church facilities are here already.

**FARMING LANDS.**—Decatur is the center of one of the finest agricultural regions in the South. The Tennessee valley produces all kinds of small grain, potatoes and fruits, as well as products characteristic of the South, such as cotton, tobacco, etc.

## Review of Decatur's Growth up to July, 1888.

The following enterprises have been located in Decatur and New Decatur, Ala., since February 1, 1887, (with few exceptions) and are in full operation, except where otherwise stated:

1. The Decatur Land, Improvement and Furnace Company was organized on the 11th day of January, 1887, and has laid out the town adjoining Decatur, known as New Decatur.
2. The Louisville & Nashville Railroad Company are now (July, 1888), completing their extensive new shops for the manufacture and repair of cars and locomotives; also roundhouses, etc., the whole covering 57 acres. It is estimated that these shops will employ 1,500 men.
3. The United States Rolling Stock Company are moving their extensive car shops from Urbana, Ohio, to Decatur, where they are putting up new works, covering 49 acres, for the manufacture of every description of cars. The machinery will be in place by September, 1888. The company will employ 500 men at first, and eventually 1,000.
4. The Decatur Charcoal & Chemical Works, running 48 ovens of a capacity of 55 cords of wood each, each cord producing two gallons of wood alcohol, 50 bushels of charcoal and 125 pounds of acetate of lime. This plant has a capacity to treat about 50,000 cords of wood per annum.
5. The American Oak Extract Company, the largest plant of the kind in the world, consuming 100 cords of wood daily in the manufacture of tanning extract. The plant is now being increased by one third.
6. A 70-ton Charcoal Iron Furnace, nearly completed and ready for operation, built by Gordon, Strobel & Laureau, of Philadelphia, on the latest improved designs. Cost \$111,000.
7. The Decatur Iron Bridge Construction Company, an immense plant with admirable machinery for building every description of railroad and other iron bridges.
8. The Ivens & Son Machine Company. Building (brick) 280 feet by 100. Manufacture boilers, engines, etc., and do all kinds of foundry work.
9. Cotton Compress (Morse, 90 inch.) built by Steers & Co., of New Orleans. Cost \$75,000, completed. The buildings are of brick and iron with stone foundation and have the largest storage capacity in the South.

10. The Decatur Car Wheel & Manufacturing Company. Capacity, 100 wheels per day at present; will be increased as fast as possible, as the company cannot now supply their orders.

11. Southern Horseshoe Nail Factory. These extensive works are being constructed, and will shortly be in operation.

12. Decatur Waterworks (both direct pressure and Holly system) now being constructed by Howland & Ellis, of Boston, Mass. There will be 38 miles of pipe, of which over one-half are laid already. The water will be turned on about September next, and Decatur will have an unrivaled water supply.

13. Moulthrop & Stevens' mammoth brick yard, occupying over 7 acres and employing 50 men, their steam machinery having a capacity of 75,000 brick per day. There are five other brick yards in Decatur, and brick can be furnished at the present time at from \$5 to \$6 per thousand.

14. H. S. Freeman's lumber mills and lumber yard. Daily capacity of mill 15,000 feet. Handles 2,500,000 shingles yearly, besides laths.

15. Arantz Brothers' saw mills and lumber yards. Operate 3 band-saws. Daily capacity of their mills 60,000 feet.

16. Decatur Lumber Company's saw mill, planing mill and dryer. A very large establishment.

17. Berthard & Company's sash, door and blind factory.

18. The Hoosier Mills & Building Company.

19. The Southern Lumber Company. Make sash, doors and blinds.

20. J. D. Jervis & Company's extensive factory for sash, doors, blinds, stairs and hardwood finish.

21. Decatur Builders' Supply Company's lumber yards and planing mills.

22. Decatur Artificial Ice Company; capacity 6 tons daily, to be increased shortly to 15 tons.

23. Decatur Cornice & Roofing Company; manufacture galvanized iron cornices and iron and tin roofing.

24. The Decatur Street Railway, running cars over 3½ miles of track. Will have 2½ miles more completed shortly. Is equipped with new rolling stock.

25. The Decatur Telephone Company, operating over 80 stations.

26. The Decatur Electric Light Co., running 30 arc lights (Brush system).

27. Grant & Company's furniture factory.

28. Decatur Building Association.

29. Bucheit's Bottling Works.

30. Decatur Printing Company.

31. Artificial Stone Works.

32. Decatur Plumbing & Supply Company.

33. Alabama Lumber & Fruit Package Company.

34. Decatur Carriage Company.

35. First National Bank. Paid up capital \$100,000.

36. Exchange Bank of Decatur. Capital \$100,000.

37. One daily and two weekly papers.

38. The new "Tavern" Hotel, in full operation, owned by the Decatur Land Improvement & Furnace Company, delightfully situated on their own grounds, magnificently furnished by the Robert Mitchell Furniture Company of Cincinnati, Ohio, with room accommodations for at least 125 guests. There are five other hotels in Decatur.

39. The Decatur Land, Improvement & Furnace Company's incandescent electric plant, furnishing lights to the "Tavern," also to stores, offices and private dwellings.

A block to contain an opera-house, stores and offices, is now being built by a joint stock company at a cost of \$60,000.

The Louisville & Nashville Railroad Company handle daily in their depot yards 640 cars, 360 going South and 280 North; employ 85 men, and pay out to employees \$6,000 monthly.

The East Tennessee, Virginia & Georgia Railway Company handle in their yards 150 to 200 cars, employ 14 men, and pay out in wages \$720 per month.

In March, 1887, the number of inhabitants in Decatur was 1,200; in March, 1888, 7,000 in Decatur and New Decatur. Since January, 1888, there have been over two hundred houses erected; many of them are substantial brick business houses.

The Decatur Land, Improvement & Furnace Company is offering most favorable terms to parties who will purchase lots for the purpose of building homes.

The capital stock of the company, by retirement of the treasury stock, is reduced to 50,000 shares, or \$5,000,000, of which 45,659½ shares have been issued and are now outstanding. It is largely held as an investment by small holders scattered through different States, very many of whom have also bought property in Decatur, and by persons engaged in business and various occupations in Decatur.

The strong financial condition of the company can best be appreciated by a perusal of its published statements of July 1st, 1888, a copy of which can be obtained from the secretary at New Decatur, Alabama.

For Maps, Illustrated Pamphlets, and Specific Information, address

## The Decatur Land, Improvement & Furnace Company

NEW DECATUR, ALA.

# Anniston

THE CENTER OF  
Iron and Cotton Industry  
AND MINERAL WEALTH.

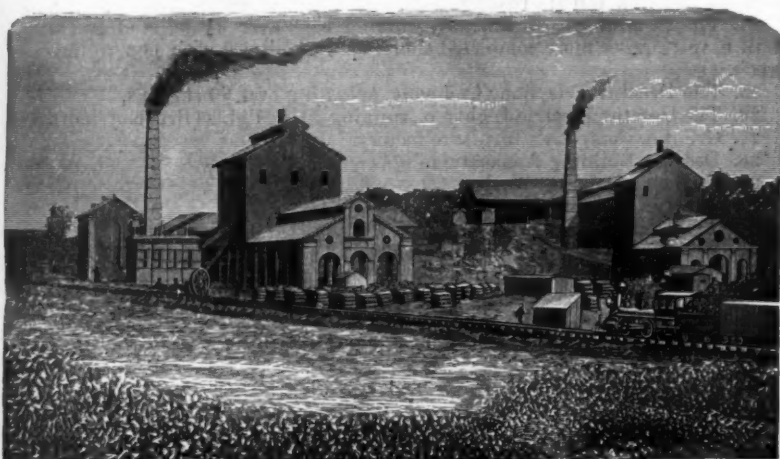
"The Model City of the South."

## IT IS

The Profits of Labor only that can add to the wealth and prosperity of a nation or community. It is this only that can make business successful and profitable, sustain and add to the value of real estate.

## WHERE

Nature's resources are greatest, where nature's capital in rich agricultural lands, and where iron, coal and other useful minerals are most abundant, most accessible and of superior quality for all purposes, there will capital find its safest investment, largest returns and labor reap its richest reward. It is to the Anniston District where the best professional mining engineers and experts of the United States declare the great center of the iron industry of the South will drift, where its manufacture will be most permanent and profitable, and where ores in the greatest abundance and accessibility exist, and where they will be most easily mined, that this applies.



WOODSTOCK FURNACES—ANNISTON.

## The Development of the Past Fifteen Years

Confirms all this, and every year convinces the experts of the correctness of their judgment. It is no longer opinion based on scientific and practical education; it is a fact that is clearly and successfully demonstrated, so that the visitor to the Anniston District can see at every step. The four iron furnaces that have been so long and successfully operated, and the new plant now being erected, and rapidly approaching completion, which will be capable of producing one hundred thousand tons of pig iron a year, demonstrate that

## NOWHERE ELSE IN THE SOUTH

Has the iron industry been so profitable and so successful, or been established on so permanent a basis, and of no district is this so universally conceded by all, while nowhere else have arrangements been perfected and already established on so complete a scale to work the crude iron into higher branches of manufacture to increase its value, and to bring into the district the profits of skilled labor. **THE GREAT CAR WHEEL WORKS OF NOBLE BROS. & CO.**, their rolling mill and steam forge and machine shops, and the Alabama Car Works, have been absorbed by the

## UNITED STATES ROLLING STOCK COMPANY,

With a capital of \$4,000,000, for the purpose of adding to and enlarging the entire plant to build **TWENTY CARS A DAY**. Everything that goes into the creation of a car, except the tin for the roof and the wire nails, will be created from Anniston's crude material by her labor and skill. Fifty tons of wheel iron will be made into car wheels daily, twenty tons into car axles, fifty tons of pig iron into car and other castings, and fifty tons into bar iron and bolts, making nearly ten thousand dollars per day added to the wealth of the country by profitable labor converting nature's capital to the use of man. This company have a capital of \$4,000,000, and their Anniston works will represent a cash outlay of \$1,000,000. One thousand skilled mechanics will be employed as soon as the great enlargements under way can be completed.

## THE STEEL BLOOMARY

Consumes and increases the value of twenty tons of pig iron per day, while the Pipe Foundry converts to the use of man **TWO HUNDRED TONS OF PIG IRON PER DAY** in one of the largest and best planned and most convenient labor-saving works on this continent. *The Foundry of Murray & Stevenson, Engine and Machine Works of Pinder & Co., and Boiler and Sheet Iron Works of J. & D. Noble*, all add to the consumption of crude material by the creation of finished work.

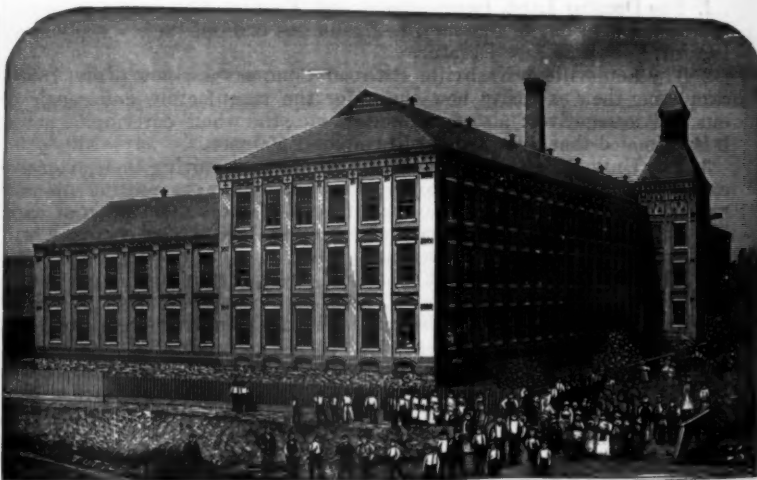
## NOR IS IT TO IRON ALONE

That Anniston relies for increase of wealth and population. The Cotton Factory, with eleven thousand seven hundred spindles and three hundred and seventy-five looms, employing over three hundred and fifty operatives, adds greater value to the products of agriculture by converting six thousand bales of cotton into cotton cloth. The immense ninety-inch Morse Cotton Compress, with its brick warehouses, is fast making Anniston a cotton market and commercial center, and aiding its wholesale and retail merchants to extend and hold the trade of the country tributary to Anniston that its system of railroads has opened to them. The Georgia Pacific, the East Tennessee, Virginia & Georgia Railroad systems,

## Give Direct Communication and Through Rates

To all parts of the country, while the Anniston & Atlantic Railroad, built by Anniston capital to open up new agricultural and mineral resources, gives Anniston, by connection with the Central of Georgia system, communication with the Atlantic sea coast and the new Anniston & Cincinnati Railroad, built and owned by Anniston citizens, opens up new resources and connections, and a shorter line with the great Northwest.

The proposed extension of the Anniston & Atlantic Railroad to Blocton will give another and shorter line to the great Cahaba Mines, producing the very best coal for domestic and manufacturing purposes in the South. Forty thousand acres of these coal lands, upon which a million and a half dollars have been lately spent in opening new mines and building several hundred coke ovens, **ALL OWNED AND CONTROLLED BY ANNISTON CAPITAL**, and developed to mine and manufacture three thousand tons of coal and coke per day, secures to Anniston for generations to come a full and certain supply of cheap fuel for all her industries, operated where a rich agricultural country can feed a manufacturing and commercial people, and where the



ALABAMA MANUFACTURING COMPANY'S COTTON MILL—ANNISTON.

## Best, Healthiest and Most Invigorating Climate in the World,

With mountain air and pure water, and an elevation of nine hundred feet above tide water, insures the health and comfort of the workman and his family; where health and comfort stimulate and lighten labor, and secure to it and its industries the reward due to both. It is these advantages which have been given by nature that enabled Anniston's citizens to create her past and present prosperity, and which secure her future. It is that they may participate in and avail themselves of these advantages that Anniston invites **NEW CAPITAL AND TALENT AND ENERGY** from all sections. We invite all to come and see, and on the spot to judge for themselves of Anniston's great resources and possibilities. The comfort and quiet of the famous Anniston Inn will make a visit to our city a treat and pleasure. Any information, attention and courtesy will be given and shown by addressing or applying to the

**ANNISTON CITY LAND CO., Anniston, Ala.**



# CONSTRUCTION DEPARTMENT

**PUBLISH**, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

## ALABAMA.

**Anniston—Terminal Railroad.**—A. L. Tyler, D. T. Parker, John M. McKleroy, S. E. Noble, F. M. Hight and others have incorporated the Anniston Terminal Railroad Co. The capital stock is \$2,500,000.

**Anniston—Land.**—D. F. Constantine has purchased a lot 140 feet front on Noble street, and will make improvements.

**Anniston—Dummy Railroad.**—The Anniston, Williamsport & Highland Cave Railroad Co., previously reported as chartered by W. H. Williams and associates to build a dummy railroad, have received permit from the city council to build said road.

**Anniston—Clothing Factory.**—L. Harrison, of Boston, Mass., will start a branch clothing factory.

**Bear Creek—Saw Mill.**—Ellis & Frederick will erect a saw mill, and want to purchase machinery.

**Bessemer—Foundry and Machine Shop.**—George W. Beggs & Bro., lately mentioned as thinking of enlarging their iron foundry and machine shop, will do so as soon as business justifies it.

**Bessemer—R. H. F. Sewall** is organizing a building and loan association.

**Birmingham—Iron Furnaces.**—The Sloss Iron & Steel Co., previously mentioned as building two new iron furnaces, have blown in one of them. The capacity will be about 140 tons.

**Birmingham—Sad Iron Works.**—The East Birmingham Sad Iron Manufacturing Co. are putting additional machinery in their works at East Birmingham. Their capacity, will, it is said, be doubled.

**Birmingham—J. R. & J. G. Smith**, iron ore miners, will erect a crusher, a compressor and engine, which they want to purchase.

**Birmingham—Lumber Mill.**—The Gate City Lumber Co. are increasing the capacity of their lumber mill.

**Birmingham—Electrical Works.**—E. G. Stevens, Jr., W. C. Harris, Jr., and W. H. McClellan have chartered the Southern Electric Co., capital stock \$10,000. They will establish electrical works.

**Birmingham—Machine Shops.**—The Alabama Great Southern Railroad Co. (office, Cincinnati, Ohio), are preparing to build an erecting shop and an oil house at their new machine shops.

**Birmingham—Railroad.**—The Columbus & Western Railroad Co. (office, Columbus, Ga.) will enlarge their terminal facilities.

**Centre—Broom Factory.**—A broom factory is talked of and will probably soon be started.

**Centre—Dummy Railroad.**—A dummy railroad will be built from Centre to the Rome & Decatur Railroad, 3½ miles. Surveys will shortly be made.

**Dayton—Railroad.**—The Dayton & Faunsdale Railroad Co. have awarded the contract for building their road from Dayton to Faunsdale, 8½ miles, previously reported, to King, Harmon & Co. They will commence work at once.

**Felix—Saw Mill and Gin.**—M. Meyer & Co., of Selma, will probably rebuild their saw mill and gin, reported in this issue as burned.

**Florence—Factory.**—A party is negotiating to move his works to Florence, which will employ about 300 hands.

**Gadsden—Factory.**—O. P. Atkinson has, it is stated, started a factory.

**Gadsden—Furniture Factory.**—R. L. Morgan will move his furniture factory from Portersville to Gadsden about January 1. He will purchase some new machinery.

**Jasper.**—A \$200,000 building and loan association has been organized.

**Montgomery—Oil Refinery.**—The Southern Cotton Oil Co. (office, Philadelphia, Pa.) have added a refinery to their cotton-seed oil mill, and are about putting it in operation. The capacity is 200 barrels daily.

**Renfro—Railroad.**—It is rumored that the Talladega & Coosa Valley Railroad Co. will change the gauge of their road from narrow to standard, and build about 50 miles of new road this fall.

**Roanoke—Railroad.**—The Central Railroad & Banking Co. (office, Savannah, Ga.) will, it is reported, extend the East Alabama Railroad from Roanoke to Wedowee, 15 miles, at once.

**Russellville—Iron Mining.**—H. Stone, previously reported as to develop iron ore mines, has commenced work.

**Selma—Depot.**—The East Tennessee, Virginia & Georgia Railroad Co., previously mentioned as to build a new passenger depot, have secured the site and will shortly commence building.

**Sheffield—Machine Shops.**—The Nashville & Florence Railroad Co. (office, Columbia, Tenn.) have accepted a site for the erection of their machine shops, previously reported. The company will spend probably \$50,000 or more in building shops, &c.

**Troy—Water Works.**—The National Water Supply Co., of Cincinnati, Ohio, have been awarded the contract to sink wells to secure water for the water works, reported last week as to be built.

**Union Springs—Handle Factory.**—H. R. Dudley will put a larger engine and boiler in his axe-handle factory to increase capacity.

## ARKANSAS.

**Fort Smith—Iron Works.**—The Ketchum Iron Co. will increase their capital stock, and greatly enlarge their works.

**Hot Springs—Railroad.**—The St. Louis, Iron Mountain & Southern Railroad Co. (office, St. Louis, Mo.) reported last week as making surveys for a branch road from Benton to Hot Springs, 25 miles, have let the contract for building it to McCarthy & Kerrigan, of Little Rock.

**Jonesboro—Opera House.**—An opera house is to be erected.

**Little Rock—Elevator.**—A passenger elevator will probably be put in the U. S. courthouse. Thomas H. Simms, custodian, can give particulars.

**Little Rock—Press Factory.**—D. H. Thomas has put additional machinery in his cotton press factory.

**Little Rock—Stock Pens.**—The Southern Oil Co. are building large stock pens to contain 1,172 stalls. Size of pens is 325x250 feet.

**Texarkana—Fire-brick and Tile Works.**—E. N. Maxwell is organizing a stock company to manufacture fire-brick and tile.

**Texarkana—Furniture Factory.**—E. N. Maxwell is interested in the \$25,000 stock company previously mentioned as being organized to start a furniture factory.

## FLORIDA.

**Ocala—Buildings.**—The Central Sub-Tropical Exposition will erect buildings. The main building will be 300x100 feet.

**Ocala—Hotel.**—The Ocala House will be renovated and refurnished at a cost of \$20,000.

**Summerville—Brick-yard.**—Newsom & Lucius have lately started a brick-yard.

**Tallahassee—Tobacco Packing.**—J. J. Metz will establish warehouses at Tallahassee and Quincy for packing and storing tobacco.

## GEORGIA.

**Albany—Electric Lights.**—The Albany Oil Co. have put electric light machinery in their cotton-seed oil mill.

**Albany—Saw Mill.**—S. R. Weston contemplates erecting a saw mill, but has not yet definitely decided.

**Athens—Electric Light Plant.**—The Athens Gas Light Co., previously mentioned as to put in an electric light plant probably this fall, will put in the plant at once. The cost will be \$15,000.

**Athens—Sewerage System.**—The city will shortly decide by a popular vote whether or not to have a sewerage system. The mayor can give information.

**Athens—Depot.**—The Georgia, Carolina & Northern Railroad Co. will build a depot.

**Atlanta—Cotton Factory.**—It is probable that a company will be organized to build a large cotton factory.

**Atlanta—Temple.**—The Masons, previously reported as contemplating building a temple, expect to erect a building to cost \$100,000. Dr. W. A. Love can give information.

**Atlanta—Stove Works.**—Fred. Sheridan, Samuel Dunlap and Lee Mahaffy, of Atlanta, and Daniel McLain, of Rome, are organizing a stock company to build stove works at once. The capital stock will be about \$50,000.

**Augusta—Cotton Factory.**—The Richmond Factory (cotton) will put in a 200 horse-power Corliss engine.

**Augusta—City Hall and Courthouse.**—The mayor has appointed a committee to confer with the county authorities in regard to building a city hall and courthouse jointly.

**Brunswick—Rice Mill.**—Efforts are being made to organize a stock company to build a rice mill to cost about \$20,000.

**Brunswick—Sewerage System.**—The building of a sewerage system is being agitated.

**Canton—Gin.**—McAfee & Tolbert are reported as to erect a gin.

**Canton—Blacksmith Shop.**—W. T. McCollum will erect a new and larger blacksmith shop.

**Cedartown—Brick Works.**—W. E. Wood, W. F. Turner, W. F. Freeman, R. G. Herbert and others have organized a company to establish brick works. They are negotiating for machinery with a capacity of 30 M bricks per day.

**Columbus—Houses.**—The Muscogee Real Estate Co. will build 9 houses at once.

**Cordele—Bank.**—H. C. Bagley and others, of Americus, will start a bank and intend, it is said, to erect a bank building.

**Emerson—Malleable Iron Works.**—Malleable iron works with a 5-ton per day capacity are to be built. J. P. Stegall can give information.

**Madison—Hotel.**—Several thousand dollars have been subscribed towards building the large hotel previously mentioned. W. A. Broughton can probably give information.

**Rome—Bottling Works.**—A. J. Allee, of Greenville, S. C., will move his bottling works from Greenville, S. C., to Rome.

**Rome—Laundry.**—Charles M. Seay has ordered machinery to start a steam laundry.

**Savannah—Railroad.**—The South-Bound Railroad Co., previously mentioned as chartered to build a railroad from a point on the Savannah river to the Florida State line, have commenced making surveys. The road will be about 130 miles long.

**Savannah—Electric Light Plant.**—The Savannah Electric Light Co. will put in additional dynamos. They are now putting in new boiler, and have lately put in 135 horse-power engine.

**Savannah—Brick-yard.**—The Savannah Brick Co. will put in machinery to run their machines.

**Savannah—Wood Mill.**—R. B. Cassells will erect a saw mill for cutting stove wood.

**Savannah—Houses.**—More houses will be built by the Chatham Real Estate & Improvement Co.

**Sycamore—Turpentine Still.**—Smith & Bussey are erecting a turpentine still.

**Tallahassee—Glass Works.**—The works of the Tallahassee Glass Co., reported last week as to be enlarged, have been burned; also the gas plant. The company will rebuild at once. The new buildings will be of brick and larger than the old ones.

## KENTUCKY.

**Ashland—Furniture Factory.**—Henry Herman is building an addition to his furniture factory.

**Carrollton—Woolen Mill.**—The Carrollton Woolen Mill Co. are putting in additional machinery.

**Covington.**—The Covington Land & Improvement Co., capital stock \$20,000, has been chartered by A. G. Simral, A. J. Carpenter and others.

**Harrodsburg—Machine Shop.**—The Louisville Southern Railroad Co. (office, Louisville) will move their machine shops from Louisville to Harrodsburg.

**Louisville—Street Improvements.**—The city will decide by a popular vote on November 14 whether or not to issue \$1,500,000 of bonds for street improvements.

**Louisville—Pipe Line.**—The Kentucky Rock Gas Co., previously mentioned as to build a pipe line from Meade county to Louisville, have contracted with Pittsburgh, Pa. parties for laying the pipe.

**Louisville.**—James G. Givens is negotiating with an English syndicate for the investment of several millions of dollars in Southeastern Kentucky.

**Louisville—Club Building.**—Samuel L. Avery, Dennis Long, J. L. Dunlap and others have chartered the Commercial Club Building Co., capital stock \$400,000, to erect the large nine-story building for the use of the Commercial Club, previously reported. It is to have about 150 rooms and two bank offices, and will cost about \$350,000. They are now advertising to purchase a site.

**Madisonville—Tobacco Factories.**—H. Holomon and J. M. Pemberton are each building additions to their tobacco factories.

**Madisonville—Tobacco Factory.**—Vergel Slaton is building a tobacco factory, probably the one lately mentioned.

**Owensboro—Flour Mill.**—J. W. Gilbert contemplates building a new flour mill.

**Pineville—Bridge.**—The contract to build the iron bridge across Straight creek, previously reported, has been awarded to the Louisville Bridge Co., of Louisville. It will be 135 feet long.

**Pineville—Saw and Planing Mill, &c.**—R. A. Hooton & Co., of Danville, Ill., will erect at once a planing mill and sash, door and blind factory to cost \$10,000. The mill's capacity will be 20,000 M per diem.



Pineville—Churches.—The Methodists and Catholics will each build a church.

Richmond—Water Works.—M. Philbin, of Chicago, Ill., has made the lowest bid (\$76,144.44) for building the works for the Richmond Water Works Co., previously mentioned.

Williamsburg—Saw Mill.—The Jones Lumber Co. will erect an additional saw mill with a capacity per diem of 40 M feet.

#### LOUISIANA.

Baton Rouge—Cotton Factory.—It is reported that J. S. Borders and A. R. Homesley, of Shelby, N. C., have leased the Baton Rouge Cotton Factory.

Lake Charles—Canning Factory.—A \$6,000 stock company has been formed to start a canning and evaporating factory, and will erect buildings at once. J. L. Williams is president; W. H. Haskell, vice-president; E. F. Wayer, secretary, and A. Meyer, treasurer. They want estimates on all machinery except boiler and engine.

Lecompte—Shingle Mill.—E. X. Weems, reported last week as having lately started a shingle mill, is interested in the Lecompte Lumber Co., who have started the mill.

Monroe—Yarn and Bagging Factory.—The Monroe Cotton Yarn & Bagging Co. has been organized to establish a factory for manufacturing yarn and bagging.

New Orleans—Knitting Mill.—Simon E. Marx will put additional machinery in his Southern Hosiery Mills. He has organized, it is stated, a stock company to operate the mills.

New Orleans—Electrical Railroad.—T. Prudhomme, Maurice J. Hart and others, reported last week as asking for permit to build an electrical railroad, contemplate experimenting with electrical motors first with a view to organizing a company to build such a road.

New Orleans—Blacksmith Shop.—Philip Kassel will put steam power in his blacksmith shop.

Pattersonville—Lumber Mill &c.—Trelue & Co. have purchased machinery to improve their lumber mill. Their shingle mill capacity will be doubled.

Robeline—Wood-working Factory.—A stock company is being organized to start a wood-working factory. \$3,500 have been subscribed.

Tangipahoa—Saw Mill.—It is reported that Latham & Smith, of Wisconsin, who own considerable timber lands, will erect a saw mill of 50 M feet daily capacity.

Vinton—Saw Mill.—C. P. Hampton will move his saw mill from Edgerly to Vinton. The capacity is 60 M feet per diem.

#### MARYLAND.

Baltimore—Warehouses.—It is stated that the Baltimore & Ohio Railroad Co. will build iron-covered warehouses on Ohio avenue.

Baltimore—Fire Apparatus Factory.—Charles T. Holloway, manufacturer chemical engines and fire apparatus, will build soon a four-story brick addition to his factory on Saratoga street.

Baltimore.—The Cosmopolitan Building Association is being organized by M. Shorman and others.

Baltimore.—The Real Estate & Improvement Co., capital stock \$2,500, has been chartered by John K. Cowen, E. J. D. Cross, Hugh L. Bond, Jr., and others.

Baltimore—Slate and Marble Yard.—John Waters contemplates starting a slate and marble yard.

Baltimore—Buildings.—G. A. Dubrell will erect a three-story brick building at 527 West Baltimore street; estate of Henry Baltjer, 3 two-story houses on Dallas street; Michael J. Dorsey, 7 two-story houses on Sassafras and Stockholm streets; James H. Pfister, 6 two-story houses on Cannon street, and Henry Rippard, Jr., 2 two-story houses on Fayette street.

Baltimore—Preserve Factory.—The Maryland Preserving Co., capital stock \$50,000, has been chartered by James W. Brady, Stephen J. Van Lill, John Pfister, Valentine Y. Stadelman and Frederick C. Branan.

Baltimore—Cigar Factory.—Becker & Co. have moved their cigar factory from Manchester to Baltimore.

Belair—Bank.—The Harford National Bank will erect a bank building.

Clarksburg—Flour Mill.—Levi L. Watkins has refitted his flour mill with roller machinery.

Cumberland—Tannery.—A company, of which James Clarke is president, and Webster Bruce, secretary and treasurer, have purchased the Withers tannery and will operate it on a larger scale. They will be known as the Payne Spring Tanning Co.

Cumberland—Street Railroad.—A. W. Hayes, W. E. Pearson and W. B. Fink, of Boston, Mass., and Thomas Kean, Samuel Sonneborn and others, of Cumberland, contemplate building the street railroad lately mentioned and have asked for permit. Their capital stock will be \$75,000. They contemplate building three miles within two years.

Kennedyville—Creamery.—A creamery will probably be started soon.

Mechanicstown—Cigar Factory.—Harry Freeze will shortly enlarge his cigar factory.

Washington, D. C.—Sidewalks.—The District Commissioners will spend about \$100,000 in building new sidewalks.

Washington, D. C.—Building.—Harvey Spalding will erect a four-story apartment house, 32x100 feet, at 704 Third street to cost \$30,000. Johnson & Co. have the building contract.

Washington, D. C.—Brewhouse.—Albert Carey will erect a brewhouse at 415 F street, N. W., to cost \$17,000.

Washington, D. C.—Cycle Factory.—The Smith Cycle Co. will increase their capital stock \$60,000 and increase their output.

Washington, D. C.—School.—The contract to erect the school building on First street has been awarded to William T. Garrison at \$24,445.

Washington, D. C.—The Columbia Conduit & Cable Co., capital stock \$500,000, has been chartered by A. D. Hazen, William R. Riley, I. L. Johnson, L. Somerville, O. T. Thompson and William A. Thompson.

Washington, D. C.—Building.—W. S. Thompson will repair and improve his building at 1421 G street at cost of \$9,000.

Washington, D. C.—Residence.—James D. Waugh will build a frame and stone residence about 10 miles from Washington to cost about \$20,000. Mr. Schneider, architect, is preparing plans.

Washington, D. C.—Street Railroad.—The bill previously mentioned as introduced in Congress to charter the Brightway & Silver Springs Railway Co. has become a law. The company will soon begin work on their street railroad. M. M. Parker can give particulars.

Washington, D. C.—Buildings.—James Robbins will erect 3 dwellings on Fourteenth street to cost \$23,000; W. Z. Partello, 7 dwellings on Four-and-a-half street to cost \$7,000; John O. Johnson, dwelling on Fourteenth street to cost \$7,000; Harvey Spalding, 5 dwellings on P street to cost \$10,000, and E. Waltz, 4 dwellings on Q street to cost \$3,200.

#### MISSISSIPPI.

Crystal Springs.—A \$50,000 building and loan association has been organized with W. C. Wilkinson and others as directors.

Estabatchie—Saw Mill, &c.—The Leaf River Lumber Co. are improving their saw mill and building dry-kilns.

Greenville—Levees.—P. F. Lamb has been awarded the contract for building 32,000 cubic yards of leveeing; S. A. Campbell, 103,000 yards; J. K. Jeffries & Co., 35,000 yards;

Earneest Hyner, 50,000 yards; T. W. Scott, 50,000 yards; C. A. Winter, 75,000 yards; W. R. Harvey, 50,000 yards; L. M. Harvey, 58,000 yards; J. L. Perkins, 48,000 yards, and L. C. Dulaney, 44,000 yards.

Grenada—Saw Mill.—B. E. Moore is moving his saw mill to a point 5 miles from Grenada.

Grenada—School.—W. H. Weller has been awarded the contract to erect the new school building, previously mentioned, at \$11,250.

Grenada—Warehouse.—The Alliance Warehouse Co. have let the contract for build a brick cotton shed and warehouse to N. Eitel, of Brookhaven.

Port Gibson—Gin.—L. N. Gibson will at once rebuild his gin, reported last week as burned.

#### NORTH CAROLINA.

Asheville—Lumber Mill.—Robert W. Child, of Boston, Mass.; J. E. Lime and H. Gilmour, of Chattanooga, Tenn., and H. W. Wilson, of Gadsden, Ala., have chartered the Buncombe Lumber & Manufacturing Co., capital stock \$50,000.

Burke County—Gold Mine.—Parties from Baltimore, Md., will soon inspect the Baker mine with a view to taking a six months' bond.

Charleston—Copper Mine.—B. B. Lake and others are developing a vein of copper with a view to selling same.

Charlotte—Machine Works.—The Liddell Co., reported last week as to build an addition to their machine works, 35x150 feet, will add about \$3,000 of new machinery by January 1.

Charlotte—Pants Factory.—J. Hirshinger & Co. will increase the capacity of their pants factory.

Durham—Thread Factory.—A thread factory is talked of.

Durham—Factories.—Several of the Durham factories are to be enlarged.

Granite Falls—Electric Lights.—The Granite Falls Manufacturing Co. have purchased electric light machinery for their cotton mill. The capacity is for 225 incandescent lights.

Greensboro—Leaf Tobacco Factory.—M. C. Patterson, lately mentioned as to erect a leaf tobacco factory, three stories, 40x100, has let the contract to Brooks & Love.

Jonesboro—Shingle Mill.—G. A. Taylor will start a shingle mill and wants to purchase a machine to cut from 10 to 15 M per 10 hours.

Louisburg—Cotton Factory.—O. L. Ellis & Co. are thinking of erecting a cotton factory.

Monbo—Cotton Factory.—The Monbo Manufacturing Co. will soon put in a new lapper.

Monbo—Cotton Mill.—The Long Island Cotton Mills will put in 2 Whitin frames, rail head, 2 cards and new knitters. A new lapper will be put in next spring.

New Berne—Road.—Bids for building a roadway from New Berne to the National Military Cemetery will be received until November 8 by G. B. Dandy, depot quarter master general U. S. army, Washington, D. C.

Oxford—Railroad.—Surveys are being made for a railroad from Oxford to the Durham & Northern Railroad, four miles. The road is stated to be completed by January 1.

Oxford—Tobacco Factory.—The Granville County Farmers' Alliance Tobacco Manufacturing Co. will be organized to start a tobacco factory. The capital stock will be \$100,000.

Plainview—Bagging Factory.—A factory to manufacture pine fibre bagging is reported to be started at the new town of Rowland, one mile from Plainview.

Red Springs—Planing Mill.—A planing mill is being built by Brooks Bros., of Greensboro.

Reidsville—Railroad.—A subscription of \$50,000 has been voted to the Atlantic & Norfolk Railroad.

Rocky Mount—Bank.—Mr. Wilkins, of Wilson, has the contract to erect a bank building and has commenced work.

Salem—Electric Lights.—The Salem Iron Works have ordered electric light machinery for their works.

Salisbury—Tobacco Factory.—J. D. Gaskill is making improvements to his tobacco factory.

Salisbury—Knitting Factory.—The Rowan Knitting Co., capital stock \$10,000, has been organized to start a knitting factory with Theodore F. Klutz as president; W. Smith, deal, vice-president, and F. J. Murdock, secretary and treasurer. They will build factory next spring.

Spout Springs—Saw Mill.—Charles C. Ruggles, of 18 South Broad street, Philadelphia, Pa., has purchased the planing mill of the Standard Lumber Co.

Williamston—Railroad.—The Albemarle & Raleigh Railroad Co. (office, Wilmington) are making surveys for the extension of their road from Williamston to Plymouth.

Wilmington—Pine Fibre Factory.—The Acme Manufacturing Co. will probably rebuild their pine fibre factory at Cronly, reported in this issue as burned.

#### SOUTH CAROLINA.

Anderson—Pants Factory.—A company is being organized to manufacture pants.

Black's—Furnace, &c.—The Magnetic Iron & Steel Mining Co., previously reported, have purchased a tract of magnetic iron ore land for \$60,000 and contemplate, it is said, erecting an iron furnace, Atlanta, Ga., and Birmingham, Ala., parties are interested.

Central—Gin.—George M. Maddox has erected a new gin.

Florence—Carriage and Wagon Factory.—Covington Bros. are building a shop for making and repairing carriages, wagons, &c.

James Island—Gin.—W. G. Hinson is rebuilding his gin reported last week as burned.

Laurens—Railroad.—It is stated that the Columbia & Greenville Railroad Co. (office, Columbia) will relay their Laurens road with steel rails.

Union—Corn Mill.—D. P. Duncan, lately mentioned as contemplating building a corn mill, has decided not to do so for the present.

White Pond—Cotton Mill.—R. L. Bloomfield, of Philadelphia, Pa., has purchased the Maverick Cotton Mills, capacity about 60 looms and 4,000 spindles, and will, it is said, operate them until next May, after which they are to be moved to near Athens, Ga.

#### TENNESSEE.

Athens—Spoke and Hub Factory.—A. J. Mowery has been prospecting for a location for a spoke and hub factory.

Bledsoe—Saw Mill.—J. P. & R. M. Parker have purchased a saw mill in Allen county, Ky., and will move same to Sumner county, Tenn.

Chattanooga—Ice Factory.—The Look-out Ice & Cold Storage Co. will increase their capital stock to \$120,000.

Chattanooga—Boiler Works.—It is reported that Alfred Webb will build boiler works.

Chattanooga—Gas Works.—H. Horne, of Macon, Ga., representing the American Water Gas Construction Co., of Philadelphia, Pa., is making efforts to secure a franchise to build gas works. It is proposed to organize a local company with a capital stock of about \$125,000.

Chattanooga—Tool Factory.—It is reported that the Chattanooga Tool Co. will increase the capacity of their factory.

Dunlap—Bridge.—The contract to build the bridge across Sequatchie river, pre-



viously reported, has been awarded to Cox & Smith. It is to be completed by January 1.

**Gallatin—Canning Factory.**—The canning factory reported last week will probably be started by the Capitol Canning Co., of Nashville, who contemplate moving their factory to Gallatin. Investigations are now being made.

**Johnson City—Water Works.**—It is reported that arrangements are being made for building water works. If true the mayor can give information.

**Knoxville—Pork-packing House.**—Metler & Zeigler have rebuilt their slaughtering and pork-packing establishment reported early in this year as burned.

**Knoxville—Coffee Roasting, &c.**—James Anderson contemplates putting additional machinery in his coffee roasting and spice grinding establishment.

**McMinnville—Cotton Mill.**—The Annis Cotton Mills Co. have lately put in about \$2,500 of new machinery.

**Memphis—Building.**—A large building is to be erected to be used as a library building. It will cost probably \$75,000. Carlington Mason can give particulars when anything is done.

**Memphis—Timber Lands.**—C. C. Mengel, Jr. & Co., of Louisville, Ky., have purchased 340 acres of timber lands on the Chesapeake, Ohio & Southwestern Railroad, near Memphis.

**Memphis—Hotel.**—A \$100,000 stock company has been organized to build a hotel at Magnolia station and establish a summer resort.

**Memphis—Mill.**—The Dixie Mill Co. has been incorporated by S. H. Brooks, J. H. Martin, W. P. Brown, John K. Speck and B. L. Bridges.

**Nashville—Coal Mining.**—The Oliver Coal & Mining Co., of Morgan county, has been chartered.

**Nashville—Electric Light Plant.**—J. F. Cowan and E. D. Davidson, of New York, and Julius A. Drake and F. J. Richters, of New Jersey, have chartered a company to erect an electric light and power plant.

**Nashville—Machine Works.**—Some additional machinery will be put in the works of the Adams & Price Locomotive & Machine Works Co.

**Nashville—Iron Furnace.**—The Nashville Iron Co. are putting in a new battery of boilers at their two iron furnaces previously reported.

**Newport—Bank.**—The Newport Bank will erect a two-story bank building, 22x64 feet.

**Rogersville—Railroad.**—The Tennessee & Ohio Railroad, extending from Rogersville Junction to Rogersville, 16 miles, has been purchased for \$150,000 by E. J. Sanford, of Knoxville.

**South Pittsburg—Warehouse.**—Duncan, Hughes & Hellman will build a warehouse at their planing mill.

#### TEXAS.

**Austin—Road.**—The Travis County Turnpike & Bridge Co. has been formed to build several roads. The capital stock is reported as to be \$150,000.

**Austin—Cigar Factory.**—The Phoenix Cigar Manufacturing Co. has been incorporated.

**Baird—Grist Mill.**—The Baird Grist Mill has lately been refitted by John W. Day.

**Canadian—Irrigation.**—It is stated that W. S. Decker has organized a company with a capital stock of \$200,000 to irrigate lands, promote immigration, &c.

**Clarendon—Hotel.**—Work is about being commenced on another hotel 60x80 feet. Ralph Jefferson can give information.

**Dallas—Bridge.**—The contract for building the iron bridge across the west fork of the Trinity river at Grand Prairie has been awarded to L. S. Leversedge & Co., at \$3,500.

**Dallas—Building.**—The Howell Bros. Shoe Co. contemplate erecting a large store building.

**Forney—Grist Mill, &c.**—G. W. Reynolds has erected a grist mill with wood saw attached.

**Fort Worth—Electrical Works.**—The Fort Worth Electric Manufacturing Co. has been chartered with a capital stock of \$100,000.

**Fort Worth—Street Railroad.**—The capital stock of the Fort Worth Street Railroad Co. has been increased to \$200,000.

**Fort Worth—Fire-log Works.**—The Texas Fire-Log Manufacturing Co., reported last week as organized with W. L. Malone as president, will erect works to manufacture White's patent fire-log for steam, cooking and fuel purposes.

**Fort Worth—Electrical Railroad.**—Parties have under consideration the building of an electrical street railroad 4½ miles long.

**Gainesville—Electric Light Plant.**—The Gainesville Gas & Coal Co., reported last week as increasing their capital stock from \$50,000 to \$80,000, have changed their name to the Gainesville Light & Fuel Co. They will add an electric plant to their works.

**Galveston—Corn and Flour Mills.**—The Texas Star Flour Mills will overhaul their old mill and add a corn mill with a daily capacity of 150 barrels.

**Georgetown—Buildings.**—The Texas Chautauquan will erect buildings.

**Grapevine—Brick-yard.**—A brick-yard has been started by Dean & Murrell.

**Greenville—Water Works.**—The Greenville Water & Electric Light Co., lately mentioned as organized to build water works and erect electric light plant, have let the contract for constructing the water works to E. Sutphin, who will commence work at once. A 135-foot stand-pipe will be erected.

**Houston—Building.**—It is rumored that capitalists contemplate erecting a building to cost \$200,000 if a certain site can be secured.

**Lampasas—Creamery.**—A stock company has been organized to start a creamery, and have ordered machinery. M. Brent can give information.

**Marshall—Electric Light Plant.**—The plant of the Marshall Electric Light & Power Co., lately mentioned as purchased by the Westinghouse Electric Light Co., of Pittsburgh, Pa., has been put in operation.

**Rusk—Rolling Mill.**—A rolling mill is reported to be built, probably after the two 50-ton furnaces previously mentioned as to be built by the Cherokee Iron & Land Co. are completed. Major Kimball can give information.

**Rusk—Courthouse.**—Proposals for building the new courthouse for Cherokee county, previously reported, will be received until November 9 by M. J. Whitman. He will give full particulars.

**Rusk—Hotel.**—The Cherokee Iron & Land Co. has plans prepared for the hotel previously reported as to be built. The contract will soon be let.

**Rusk—Wagon Factory.**—Mr. Devaney, of Tennessee, will build a wagon factory.

**San Angelo—Buildings.**—A block of stone buildings will be erected by the W. Willis estate, of Galveston.

**San Antonio—College.**—A fund of \$50,000 is being raised to secure the erection of a large college by the Methodists. Rev. Charles E. Giddings can give particulars.

**Sherman—Iron and Machine Works.**—The Sherman Iron & Machine Works, reported in this issue as burned, will be rebuilt at once.

**Sherman—Electric Light Plant.**—It is reported that Boyd Anderson will erect an incandescent electric light plant.

**Temple—Water Works.**—The Temple Water Works Co. contemplate enlarging their works at a cost of about \$45,000. W. G. Jones can give particulars.

**Weatherford—Church.**—The Cumberland Presbyterians will build a church to cost \$8,000.

#### VIRGINIA.

**Bonsack's—Zinc Works.**—The Washington Zinc Mining Co. contemplate building large zinc works. Work will be commenced next spring.

**Danville—Tobacco Factory.**—John E. Tackett, of Hamilton, Conn., will start a plug tobacco factory, and has leased a building.

**Danville—Tobacco Factory.**—The new tobacco factory previously mentioned as to be built by Stulz, Lisberger & Co. will be of brick, four stories, and 80x145 feet. They will soon begin work.

**Fredericksburg—Land.**—Oliver Watson and others contemplate organizing the Virginia Land & Improvement Co., a charter for which was secured at the last session of the legislature.

**Leesburg—Car Covers.**—The Price Patent Car Cover Co., capital stock \$600,000, has been organized with J. W. Foster as president; Samuel Ross, of Washington, D. C., vice-president, and James H. Marr, treasurer.

**Lynchburg—Church.**—The Episcopalians will build a fine large church on Clay street.

**Norfolk—Bed Factory.**—The Virginia Manufacturing Co. will start the manufacture of wire wove folding beds, cots, &c.

**Petersburg—Tag Factory.**—Mitchell & Co. will put in their printing office and tag factory machinery for manufacturing tin tags.

**Portsmouth—Iron Shears.**—The Niles Tool Works, of Philadelphia, Pa., have contracted to furnish the U. S. navy-yard with a set of iron shears of 100 tons capacity.

**Portsmouth—Boiler Shop.**—No bids being received for building the extension of the boiler shop at the navy-yard, the work will be done by the employees at the yard. \$14,488 has been appropriated for the work.

**Portsmouth—Water Works.**—A new water works system will be constructed at the U. S. navy-yard.

**Richmond—Electric Lights.**—The Virginia & North Carolina Wheel Co. have purchased electric light machinery for their factory. The capacity is for 75 incandescent lights.

**Roanoke—Wood-working Factory.**—The Roanoke Manufacturing Co., reported last week as starting a kindling wood factory, are putting other machinery in to increase capacity.

**Staunton—Canning Factory.**—The Staunton Canning Co. will double the capacity of their canning factory by next year.

**Suffolk—Railroad.**—A subscription has been raised to secure the building of the Chowan & Southern Railroad by way of Suffolk.

**Suffolk—Buildings.**—Lou Catagni will erect four brick store buildings.

**Wythe County—Railroad.**—J. H. Wingate, of Roanoke, is making surveys for a branch railroad.

#### WEST VIRGINIA.

**Charleston—Ice Factory.**—It is reported that the Diamond Ice Co. will increase the capacity of their works.

**Parkersburg—Machine Shops.**—The Ohio River Railroad Co. are negotiating for the purchase of 12 acres of land to erect additional building for their machine shops. If purchase is effected work on buildings is reported to be started at once.

**Piedmont—Pulp Mill.**—John F. Quigley, of Harper's Ferry, and William Lake, of Wilmington, Del., reported last week as purchasing property and to build a large pulp mill, have incorporated as the Pied-

mont Pulp Mill Co., with a capital stock of \$100,000.

**Plymouth—Coal Mine.**—W. P. Read & Co. have opened a new coal mine.

**River View—Coal Mining, &c.**—The Bush Run Coal & Coke Co., lately mentioned as organized at Staunton, Va., to mine coal, manufacture coke, &c., in West Virginia, have commenced operations. Their capital stock is \$30,000.

**Spencer—Hospital.**—The contract for erecting the hospital for the insane, previously mentioned, has been awarded to Mr. Kitson. He has commenced work on first building, which will be 200x39 feet.

**Wheeling—Soap Factory.**—Parties in Pittsburgh, Pa., have purchased the Wheeling Soap Co.'s factory and will operate it, probably on a larger scale.

**Wheeling—Iron Mining.**—Edward S. Clark, George Seebick, Joseph Vogel, Sr., and others, of Pittsburgh, Pa., have incorporated the Lawrenceville Iron Mining Co., capital stock \$10,000, to develop mines in West Virginia.

**Wheeling—Iron Furnace.**—The Wheeling Iron & Nail Co. have blown in their iron furnace previously mentioned as being repaired.

**Wheeling—Tack Factory.**—One of the Riverside nail factories is reported as to be changed to a tack factory.

#### BURNED.

**Augusta, Ga.**—The Kendrick mill and gin, 8 miles from Augusta, owned by Geraty & Armstrong, of Augusta; loss \$2,000.

**Brunswick, Ga.**—The paint shops of the Brunswick & Western Railroad Co. They will probably be rebuilt.

**Dawson, Ga.**—The grist mill, cane mill and cotton gin of Brun & Bro., 4 miles from Dawson; loss about \$4,000.

**Fayetteville, N. C.**—The grist mill and cotton gin of A. J. Ballard.

**Felix, Ala.**—The saw mill and cotton gin of M. Meyer & Co., of Selma. They will probably be rebuilt.

**Franklin, La.**—The Belleview sugar-house and refinery of McLaury, Underwood & Short.

**Greenville, Ala.**—The engine-house at the cotton gin of William Hartley.

**Houma, La.**—The Woodlawn sugar-house damaged by a boiler explosion.

**Kramer, Ga.**—The saw mill of Miller & New, 3 miles from Kramer.

**Mayville, Ala.**—The saw mill of Mr. Johnson, near Mayville.

**Sherman, Texas.**—The Sherman Iron & Machine Works; loss \$35,000. They will be rebuilt at once.

**Tallapoosa, Ga.**—The works of the Tallapoosa Glass Co., including the gas plant; loss \$12,000. They will rebuild at once.

**Van Buren, Ark.**—The engine room of the Barnes Lumber Co. damaged by fire.

**Wilmington, N. C.**—The Acme Manufacturing Co.'s pine fibre factory at Cronly. Will probably be rebuilt.

The gins of W. M. Kinsaul, Scuffleton, N. C.; H. D. Culpepper, 12 miles from Meridian, Miss.; John Anderson, Sparta, Ala.; Francis Bradford, in Clinch county, Ga.; L. B. Varn, Barnwell C. H., S. C.; J. C. Kersey, Poplar Grove, Ark.; T. C. Ferguson, Glendale, Ark.; J. W. Vaughn, 5 miles from Toombsboro, Ga.; Alexander Armstrong, 5 miles from Demopolis, Ala.; Aughtry Bros., 7 miles from Columbia, S. C.; W. A. Parks, 3 miles from Woodruff, S. C.; Mrs. G. Dunson, La Grange, Ga.; G. A. Richardson, near Vicksburg, Miss.; estate of S. Danson, La Grange, Ga.; William Bradfield, La Grange, Ga.; J. R. Lewis, in Barbour county, Ala.; W. S. Shifflet, Lake Creek, Ga., and D. C. Kincaid, Forney, Texas.



**MACHINERY WANTED.**

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Brick Drier.—E. W. Stanland, Summer-ville, S. C., wants to purchase a brick drier.

Bridge.—Proposals for building a wooden bridge near Somerton, Va., will be received until October 29 by Bruce Smith. It is to be 120 feet long, 12 feet wide, and to consist of 6 spans.

Bridge.—The county commissioners at Fort Worth, Texas, will receive until November 12 proposals for erecting an iron bridge 50 feet long and 12 feet wide, with two 15-foot approaches.

Bridge.—The Kentucky Central Railroad Co., Covington, Ky., are advertising for bids for building an iron bridge over the Licking river. It is to be 217 feet long.

Canning Machinery.—J. L. Williams, Lake Charles, La., wants estimates on all machinery for canning and evaporating factory except boiler and engine.

Engine.—B. F. Mosyan, Temple, Ga., will probably soon want to purchase an automatic engine.

Fire Hydrants.—Proposals for furnishing 50 fire hydrants will be received until November 3 by the district commissioners, Washington, D. C. They will give full particulars.

Iron Railing.—Proposals for furnishing and erecting about 1,600 feet of iron railing at the Soldiers' Home National Cemetery will be received until November 10 by G. B. Dandy, deputy quartermaster general U. S. army, Washington, D. C.

Lathe.—The Little Rock Chair Co., Little Rock, Ark., want to purchase a good lathe, 20-inch swing and 16-foot bed-plate. Either new or second-hand will do.

Saw Guide.—The Raymond Mills Co., Raymond, Va., want to purchase a circular saw guide.

Shavings Fan, &c.—Lamb & Smith, Columbia, Tenn., want to purchase a shavings fan and furnace feed.

Shingle Machine.—G. A. Taylor, Jonesboro, N. C., wants to purchase a shingle machine to cut from 10 to 15 M per 10 hours. He also wants to know what power is required to run it.

Trip Hammer.—The Standard Scale Co., Rome, Ga., want to purchase a trip hammer.

Wagon Machinery.—B. F. Montgomery, Raleigh, N. C., will soon want to purchase machinery for a wagon factory.

**Furniture Factory.**

TEXARKANA, ARK., Oct. 17, 1888.

*Editor Manufacturers' Record:*

We are organizing a furniture company to manufacture furniture, &c.; also a fire-brick and tile company. Finest opening in the Southwest for either of these enterprises. I would like some experienced men to become interested in this matter from abroad, and come here and take positions in these different enterprises. I will be glad to hear from any one.

E. N. MAXWELL.

ELIZABETH CITY, N. C., Oct. 19, 1888.

*Editor Manufacturers' Record:*

We have enlarged our planing mill from a capacity of 10,000 feet to 35,000 feet of dressed flooring, ceiling, &c., daily.

THE ALBEMARLE LUMBER CO.

**To Build Ice Factory.**

LITTLE ROCK, ARK., Oct. 16, 1888.

*Editor Manufacturers' Record:*

We will begin work very soon on our new ice factory of 80 or 40 tons capacity (we think the machinery will make 40 tons). It will be a brick building and one of the most substantial and best appointed in the South.

The Arkansas Manganese Co. are making the foundation for their furnace about nine miles from this city. The Kellogg silver and lead mines are also getting in shape to begin about ten miles from this city.

LITTLE ROCK ICE CO.

**To Build Railroad.**

ARKANSAS CITY, ARK., Oct. 19, 1888.

*Editor Manufacturers' Record:*

We have organized the Arkansas & Gulf Railroad Co. to build a railroad from the Louisiana line in Chicot county, to Mammoth Spring, in Fulton county, a distance of about 275 miles, passing through the following counties: Chicot, Desha, Lincoln, Arkansas, Lonoke, Prairie, White, Cleburne, Stone, Independence, Izard, Sharp and Fulton.

We also have in operation at this point a new cotton compress of a capacity of 1,500 bales per day.

Arkansas City is fast becoming one of the most important shipping points on the Mississippi river between New Orleans and Memphis. THOS. R. SHARP, Man.

**Knitting Factory.**

SALISBURY, N. C., Oct. 23, 1888.

*Editor Manufacturers' Record:*

The Rowan Knitting Co. was organized this afternoon, with capital of \$10,000. Will build in the spring. The following were elected officers: Theo. F. Klutz, president; W. Smithdeal, vice-president, and F. J. Murdock, secretary and treasurer.

THEO. BUEBAUM

**Electric Light Plant.**

GAINESVILLE, TEXAS, Oct. 16, 1888.

*Editor Manufacturers' Record:*

We have increased our capital and changed our name from Gainesville Gas & Coal Co. to Gainesville Light & Fuel Co., and will add electric light plant to our former business. E. L. HOPPER, Supt.

MONROE, N. C., Oct. 22, 1888.

*Editor Manufacturers' Record:*

The Monbo Manufacturing Co. have recently added to the spinning department of their plaid mill 768 Whitin gravity spindles, new spooler and reel. Will put in new lapper soon. Mr. James Brown, proprietor of the Long Island Hosiery Mills, will put in 2 Whitin frames, rail head, and add 2 cards and new knitters. Will put in new lapper in the spring.

A. B. SAUNDERS.

**Canning Factory.**

LAKE CHARLES, LA., Oct. 16, 1888.

*Editor Manufacturers' Record:*

Our citizens have just organized a canning and evaporating company; \$6,000 subscribed, with privilege of increasing. J. L. Williams is president; W. H. Haskell, vice-president; A. Meyer, treasurer, and E. F. Wasey, secretary. Buildings will be started at once; would like estimates on machinery except boiler and engine.

J. L. WILLIAMS.

LEAKY, TEXAS, Oct. 16, 1888.

*Editor Manufacturers' Record:*

We have a fine bed of kaolin here, covering several acres, and will begin shipping raw material in a few days.

A. J. BARNETT.

**Enterprise in Arkansas.**

MAMMOTH SPRING, ARK., Oct. 23, 1888.

*Editor Manufacturers' Record:*

Arkansas is coming to the front and taking her place with her advanced sister States of the South. For many years, when all others were being developed, her industries were almost entirely neglected.

But now she is making rapid strides towards the position she should occupy, and not many years hence her manufactures will compare favorably with the most advanced. One of the most notable of recent events within her borders is the completion of the dam at Mammoth Spring by the Mammoth Spring Improvement & Water Power Co. This is the largest and most substantial structure of its kind in the Southwest, and will stand for generations as a monument of its designer's skill and builders' workmanship. It consists of a masonry apron 120 feet long, 12 feet wide on the base and 5 feet 10 inches wide on the coping, and 16 to 19 feet high, flanked by two wheelpits, 16 feet by 22 feet internal diameter, with walls 8 feet thick. All this is set in a bed of concrete on the solid rock, so that nothing short of an earthquake or some like convulsion of nature can harm it. In the walls of each wheelpit are set three massive iron gates, 4 feet by 5 feet, for the inflow of the water and from the tail-water spring three heavy brick arches for its outflow. In the apron two more of the gates are set to drain the pond if at any time it should be necessary. In all its material and workmanship this dam is of the best and will stand any pressure brought to bear upon it. Earthworks nearly 1,000 feet long complete the dam and are as substantial as skill can make them. This dam encloses the spring only and forms a pond of about 15 acres directly around it. This spring is undoubtedly the mammoth spring of the world; 170 feet in diameter, 70 feet deep, and gushing out 30,000 cubic feet per minute. Where is one that can compare with it? This flow, with the head formed by this dam, will develop about 1,000 horse-power of the finest water power in the country, for it never overflows, never goes dry, never freezes, never gets muddy and never has any drifting logs or timber on it. For these reasons it will be a very superior power for anything connected with electricity, for breweries, for paper mills and pulp mills; in fact, for anything where a sure, steady power or a large quantity of pure water is needed, and from its location and natural advantages it will prove to be a favorable location for wood-working factories, cotton, woolen or flour mills. It is the purpose of the company to lease this power to factories if this can be done readily, and at once to build other dams and develop the power all along their property down Spring river, until the full 20,000 horse-power available is made use of. So, soon this part of Arkansas is destined to become a manufacturing community, and the raw materials which now pass by on the way to the North and East will be stopped and manufactured here, thereby turning into the mill-owners' profits the saving in freight both ways. Who can say but what in the near future this will not be a rival to Lowell, Lawrence, Fall River or the other mill towns of the East?

H.

**To Build Railroad.**

BRUNSWICK, GA., Oct. 17, 1888.

*Editor Manufacturers' Record:*

We have applied for charter for road—Cordele to Waynesville—connecting Atlanta & Florida, Georgia Southern and Americus, Preston & Lumpkin at Cordele, and Brunswick & Western and South Brunswick Terminal at Waynesville.

W. F. PENNIMAN, Pres.

**Basic Steel Patents.**

Referring to the recent decision against Mr. Jacob Reese in the basic steel patent case, as given in a late issue of the MANUFACTURERS' RECORD, the Bulletin of the Iron and Steel Association says:

The controversy between Mr. Jacob Reese, of Pittsburgh, and the Bessemer Steel Co. (Limited), concerning the ownership of certain patents covering Mr. Reese's inventions in connection with the manufacture of steel by the basic process, has at last been finally disposed of by a verdict in favor of the company. On October 1st the Supreme Court of Pennsylvania, in an opinion by Justice Green, dismissed, with costs to appellant, the appeal of Mr. Reese in the case of the Bessemer Steel Co. (Limited) against him to require him to deliver up certain patents for the basic process. There existed between the Bessemer Steel Co. (Limited) and Mr. Reese contract relations evidenced by four distinct writings. The specific controversy was whether Mr. Reese was bound to transfer to the Bessemer Steel Co. (Limited) all inventions, patents and applications for patents in existence on September 5, 1879, the date of the principal contract. The master in chancery decided that such inventions were included in the contract, but limited them to such as related only to the manufacture of steel into rails, ingots and billets. The Allegheny County Court decreed that all patents were included, and that Mr. Reese must assign them to the Bessemer Steel Co. (Limited) for the sum of \$32,000. This opinion is now sustained.

The error has been zealously fostered in some sections of the country, by free-traders and others, that the production of basic steel in the United States has been prevented by the selfishness of the Bessemer Steel Co. (Limited) which owns the English patents and has supposed that it also owned Mr. Reese's patents. It is true that, immediately after the Bessemer Steel Co. (Limited) acquired the ownership of the English patents, it declined to grant licenses to use them, and for a variety of reasons not now necessary to inquire into or to justify. It is also true that, when the controversy with Mr. Reese commenced several years ago, no persons wanted to accept licenses from the company unless they were guaranteed against an infringement lawsuit from the other side, which guarantee could not be given. It has thus happened that down to the present time the Bessemer Steel Co. (Limited) has not granted a single license, although for several years it has been ready and willing to grant licenses to all persons who would agree to pay a royalty of one dollar per ton for every ton of melted metal which should be converted into steel by the basic process. It has not advertised this fact because of the legal difficulties with Mr. Reese, which, as we have said, prevented it from guaranteeing licenses against legal proceedings in Mr. Reese's behalf. But to various applicants it has explained the situation exactly as we have done above. The company is now willing to grant licenses upon the terms mentioned. It would be glad to get back in the shape of royalties a part of the \$300,000 it has paid for the English patents and paid to Mr. Reese, or agree to pay to him.

It will be seen that the real difficulty in the granting and accepting of licenses to use the basic process in this country has been an extended and troublesome legal controversy with Mr. Reese, which is now ended. Whether this country possesses exactly the kind of iron ores which is required for the manufacture of basic steel, and whether, if it does, steel can be economically manufactured by the basic process in competition with the older acid process, are questions which have not yet been decided affirmatively by practical men.

Subscribe to the MANUFACTURERS' RECORD  
Price \$4.00 a year, or six months for \$2.00.



### Importance of the Iron Ore Interests.

With continued protection the development of the ore mines of the Lake Superior region will be continued on a grander scale than has yet been attained. These practically inexhaustible mines of rich ore proclaim the necessity of such an economic policy as will insure their increasing use. The season's production will be about 3,750,000 tons. Upwards of 750,000 tons were in stock carried over from last year. The mines of Alabama, Tennessee, Virginia, New Jersey, Pennsylvania, Ohio and other States also contribute large quantities. But few people take time to think of the magnitude of the interests which rest upon the foundation of ore. There is first the 310 blast furnaces reported in blast October 1, which are turning out 130,000 tons of pig iron per week. But for ore, this industry could not exist. The iron and steel industries, in their extraordinary diversification, could not exist. The hundreds upon hundreds of millions of capital employed in them would not be employed, and the tens upon tens of thousands of laborers, skilled and unskilled, who enjoy a competence from their toil, would be now toiling in some other overcrowded and poorly paid vocations. No other product in the wide world furnishes so much and such diversified employment as iron ore. Gold is trifling in comparison. But for it civilization and progress and development would be impossible. Our railroads, but for it, would have no existence. Mules and canal boats and stage-coaches would to-day be serving us instead of locomotives and all the luxurious accompaniments of wealth and progress.

But for ore steamships would be unknown; our industrial system could not exist; shop life and the occupation of the artisan would scarcely be heard of; the farmer would not have even a scythe with which to gather his grain; the mechanic would not have an auger, chisel, plane, saw or lathe; progress would be impossible; city life would not be heard of; the world would of necessity remain in barbarism.

Iron ore is the true philosopher's stone. It lies at the basis of nearly all wealth, activity and power. It enters into almost everything. Take its products, iron and steel, out of the world but for a week, and the world would begin to starve and die, and the human race, if it did not become extinct, would relapse into a worse and baser barbarism than was ever known since the earliest historic era.

Iron ore is the basis of the civilization of the nineteenth century. All other civilizations decayed because they had some other basis. Our civilization is lasting. Its elements were created by the Almighty when the foundations of the world were laid. This hidden wealth has been waiting for the coming intelligence of man all these slowly revolving ages. In former ages, crude implements and tools were made from ore, and the crude civilizations then existing bore a close relationship to these crude methods. As man learned to use ore and shape its products, and refine them more and more, so did he advance in intelligence, in power to govern himself, in power to expand and use his energies, and to make the world and nature more and more subservient to him and his expanding necessities of mind and body. Ore has been the touchstone by which all progress has been measured, and it is the standard, perhaps, by which the progress of the world will be measured for decades to come. Let any people or nation measure their use of ore per head of population, and the economist can tell them what measure of progress they have made. There is more intelligence where more iron ore is smelted and used. It comes from the bowels of the earth, and is made to render up its hidden wealth for ten thousand

and purposes, and thus enters into the constitution, veins and fibre of our social structure, in its refined state, to strengthen it. Nature has stored this valuable product away in safe places for man's use. In all past ages, when civilizations of an ephemeral sort rose and fell, when statesmen and philosophers and commanders and heroes were seeking for some hidden power to support and maintain themselves against the assaults of enemies of every sort, this product of the Almighty's workshop remained hidden away waiting, waiting for the evolution that nature ordained from the beginning should take place to bring man up to a comprehension of its utilities and its hidden powers and capabilities.

We have reached that high plane; we have seized upon this mighty force wrapped up in nature's brown rock. Little did its early discoverers imagine that its use was to lift the world out of barbarism, so to speak, and into a permanently higher plane. With it men have reached to the stars, have delved into the mighty mysteries of nature, and have sought to unfold the mysteries of creation itself.

Over 150,000 miles of railroad, over 30,000 locomotive engines, over 300,000 miles of telegraph lines, over 70,000 great engines which are driving the wildernesses of machinery that make employment for the four million wage workers in the nation's workshops, are all the product of our iron ore treasures, that until a few years ago lay hidden under the soil behind the barren hills that lie beyond the lakes.

Our own progress is measured by the consumption of ore. Last year the figures reached 12,000,000, against 11,000,000 tons in 1886. Twenty-five years ago the mining of iron ore was in its infancy. It still is, compared with what its use will be ten, twenty or fifty years hence.

And yet there are those in our land who advise the adoption of such a policy and economy as would restrict the usefulness of this valuable product to the people. Let them beware. The people have tasted of prosperity. Their ambitions are aroused, their intelligence has been fired with zeal and they see the grand possibilities before them. Woe betide the men, or the party, or the interests, that will ever try to throw obstacles before the aroused people, or seek to rob them of the means of their advancement.—American Manufacturer, Pittsburgh, Pa.

### To Enlarge Machine Works.

CHARLOTTE, N. C., Oct. 17, 1888.

*Editor Manufacturers' Record:*

We expect to enlarge our machine works plant by adding a building 35x150 feet, iron roof, and shall add about \$3,000 worth of new tools between now and January 1st. LIDDELL COMPANY.

### Will Enlarge Factory.

BALTIMORE, MD., Oct. 23, 1888.

*Editor Manufacturers' Record:*

We will shortly erect a four-story brick addition in rear of our present fire apparatus works, making the whole plant 260x60 feet, four stories high.

CHAS. T. HOLLOWAY.

### Will Erect Works.

FORT WORTH, TEXAS, Oct. 19, 1888.

*Editor Manufacturers' Record:*

The Texas Fire-Log Manufacturing Co. has been organized to manufacture White's patent fire-log for steam cooking and fuel purposes. The company will erect works. The officers are W. L. Malone, president; C. E. Lee, vice president; Roland Johnston, secretary; W. A. Callaway, treasurer, and G. W. White, superintendent of manufactory and general business manager.

W. L. MALONE.

### Shall We "Boom" Trade, or Go Slow?

It is conceded by all who pretend to know that the timber wealth of the South has contributed as much as any other of her numerous resources to bring about the present prosperous conditions. Now that the lumber industry of the South is fairly established and stands upon an equal footing with that of older sections, where the trade has been reduced to a system years ago, the question comes up: What is our best policy to pursue in order to realize the best returns for our timber? Shall we keep on adding to our lumber producing capacity—keep "squealing" for lower transportation rates, and cut all our timber as quick as we can? or, shall we go slow and stimulate demand by keeping production within profitable bounds?

The Lumberman has advocated the conservative course. We know what a terrible waste of timber it cost to build up the Southern lumber interests. We have brought skilled men, first-class machinery and capital to operate it to our forests by offering as an inducement the best timber in the world for less price than it cost in any settled, civilized country in the world. We are still selling our timber products for less than they are worth, compared with the prices of all leading kinds of American lumber. It appears to us that it will be better for the timber owner, the mill men and the capitalists who have invested in timber lands, to discourage a continuous glutting of the market, as the present milling capacity of the South is easily able to do. It will be best for the railroads also, as they expect to be here and in operation long after all the timber is gone at the present rate of destruction. It is a common saying that the railroads, by combining, can build up or break down the trade of any particular locality, and every shipper strives to get the lowest possible rates. A local city daily gave last week the following spicy account of an episode involving the views expressed above:

"A few days ago a New Yorker walked into the office of G. R. Knox, general freight agent of the Nashville, Chattanooga & St. Louis Railway, and in a blustering manner demanded that he should reduce the rates on lumber over his line to the great financial center of America, the visitor declaring that by the schedule of rates presented to him he could not compete with other shippers to that city. Mr. Knox informed him that the rates could not be reduced any lower than those which had been shown him. With this response the New Yorker grew indignant and intimated, in a rather sarcastic tone, that Southern railroad men had very limited ideas in regard to the transaction of business. This undeserved insinuation rather riled Mr. Knox, who retorted that he did not care whether the bluffer shipped the lumber from along the road or not; that the timber was being cut down fast enough anyhow; that the company did not care to ship raw lumber to Northern cities that it might be returned to the Southern markets and sold as manufactured goods at an immense profit. It was the object of railroad companies to encourage the manufacture of the raw material along their own lines, to develop manufactories that they might build up communities and populations which would give better and more enduring support to them; that as the people prospered and towns and cities grew, just in that proportion was their progress marked. To sell all the raw lumber out of a country in a rush would be far more disadvantageous to a railroad line than to encourage people to settle along it and manufacture from it themselves, and more money would be made in transportation of first-class goods than the raw material.

The New Yorker shrugged his shoulders, discovered he had encountered a practical Southern railroader, and said that he guessed he would have to accept the rate proposed.

This is rather suggestive of the fact that the hills, mountains and valleys of Tennessee are being much more rapidly denuded of their timber than one who does not witness the daily transportation of lumber by the train load would suppose."—Southern Lumberman.

### Literary Notes.

To all directly or indirectly interested in the lumber industry of the United States, a series of compilations now appearing in the Northwestern Lumberman, of Chicago, will be of the utmost importance. It consists of directory lists of manufacturers of and dealers in lumber and principal timber products in all the States and Territories. They are, as a glance at them shows, compiled from original sources, and will be published as completed, thus insuring their freshness and current value. In its issue of October 20 are given lists for Kentucky and West Virginia, making the second group of the series. Convenient reference marks indicate the exact character of the business done, and in the case of mills and factories their approximate daily capacity and the power employed. The list embraces saw, shingle, stave and heading and planing mills; sash, door and blind factories, box factories; wholesale, retail and commission dealers in lumber, timber and logs, and other products of mills and factories. With each is given the principal kinds of timber used in manufacture or handled. Those who have had any experience in works of this sort will be impressed by the costly and laborious character of this compilation, and those who have occasion to put themselves in communication with lumbermen of any class will appreciate its value as a work of reference.

LUCY M. J. GARNETT opens the Woman's World for November in a paper on "The Fallacy of the Equality of Women," in which she sets to work to knock the pins from under Mrs. M'Laren's paper printed in the same magazine. "A Pompeian Lady" is the subject of a paper by Edith Marget, which is followed by an exhaustive article on elementary school teaching as a profession from the able pen of Miss Edith Simcox. To give the reader something light in the way of food after Miss Simcox's serious paper, we find a poem by Janet Ross on "A View Near Taranto." Again we walk through the Morias with Miss A. Mary F. Robinson to guide our footsteps and explain the way: "The Truth About Clement Ker," a story that has excited a more than usual amount of attention, is brought to a close. Miss E. Betham Edwards writes of "The Lace Makers of Le Pay," and her paper is excellently illustrated. Then comes a paper on "The Modern Dressmaker," by J. E. Davis. The paper which will probably attract the greatest amount of interest among the readers of the Woman's World will be that on "A Woman's Friendship," by Hulda Friederichs, who takes Mary Stuart and Mary Seton for her text. Bringing up at the end of the magazine comes Mrs. Johnstone's capital fashion papers with their admirable illustrations.—Cassell & Co., New York, 35 cents a number, \$3 50 a year in advance.

SAVANNAH, GA., Oct. 23, 1888.

*Editor Manufacturers' Record:*

We have just increased our plant by adding another 125 horse-power Buckeye engine, and have ordered a steel boiler, 60 inches diameter, 16 feet long, from the Woodbury Engine Co. Will also build a brick chimney 120 feet high, 6 feet diameter. BRUSH ELEC. LT. & POWER CO.



### Hine's Eliminator for Extracting Oil and Grease from Exhaust and Water from Live Steam.

Owing to a mistake in a recent issue we republish the following illustration:

The saving advantages in utilizing exhaust steam from engines, pumps, &c., is rapidly becoming understood by steam users. The oil and grease, however, which is carried with it renders the steam and the water condensed therefrom unfit for use. To obtain an exhaust steam free from oil and grease the Hine eliminator is put upon the market, its entire efficiency and reliability having been thoroughly demonstrated.

By referring to the accompanying drawings (showing sectional views) the special

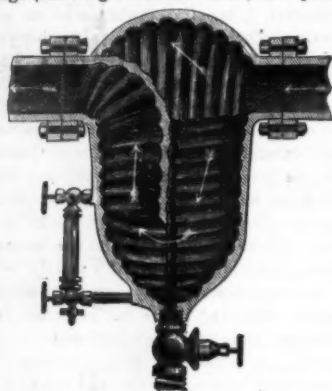


FIG. 1.

features of the invention will be noticed. Being set into the exhaust pipe (flange connections) from the engine or pump, as convenience will allow, it will be seen that the exhaust steam upon entering the eliminator instantly expands, and impinging the corrugated and otherwise roughened surfaces, breaks up. The entrained oil, grease and dirty water being expelled adhere to the inner roughened surfaces and gravitate to the bottom of receiving chamber and are discharged through the drain valve, while the clean dry steam, deflecting from the face of the depending partition, is driven first down, then upward in continuous contact with the roughened corrugated sur-

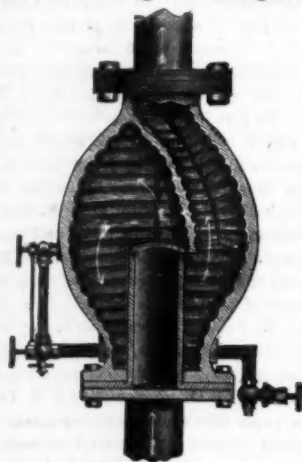


FIG. 2.

faces in its course. Being attached to the live steam pipe it will separate the water, giving at all times dry steam to engine or pump. For this purpose the vertical connection is especially adapted as it can be set close down to the engine, and operates equally well whether the steam is admitted at bottom or top. We are authorized by the manufacturers, Messrs. Hine & Robertson, 45 Cortlandt street, New York, to state that they guarantee this apparatus to do all they claim for it, and to responsible parties they will send it on trial with the understanding that if it fails to give entire satisfaction in its application to either exhaust or live steam, it can be returned to them and they will pay cost of transportation both ways.

### Beck Vertical Engine.

The accompanying cut shows the Beck vertical engine, manufactured by the Taylor Manufacturing Co., of Chambersburg, Pa. The cut shows the engine on circular base and fitted with plain slide valve and throttling governor, adapting it to power purposes where the space is limited, such as operating printing presses, blowers, pumps, cheese and canning factories, creameries, glass works, etc. The crank is made in either the disc or center crank pat-



THE BECK VERTICAL ENGINE.

tern, as is desired, and can be arranged on a combined base for extended shaft and extra bearing. The engine is also fitted with the same automatic regulator that is employed on the Beck horizontal engine, and on a combination base for a dynamo, making a neat compact and durable rig, especially adapted for isolated electric lighting. The engines throughout are constructed of the best material and by skilled workman and are guaranteed to give satisfaction. For further particulars address the manufacturers.

THE reports from the various manufacturing industries show that the general state of activity is not only sustained, but that every week adds its quota of mills, furnaces and factories in which fires are being started. The comparatively few factories which shut down are more frequently actuated by special causes than by unfavorable trade conditions. The iron trade holds its activity. Steel rails, while still low, are in better request. The machine shops continue busy. The textile mills are well employed, the outlook for cotton goods being satisfactory, while some of the woolen mills are running their machinery overtime. The shoe factories are still turning out a great many fall goods and the orders already booked for spring trade give promise of a busy season. The activity of the paper trade is reflected in the erection of new mills and an increase of productive capacity. The glass works throughout the country are in full operation. An item of interest is the constant replacing by roller machinery of the old methods of grinding in flour mills. The ship-building industry appears to have fallen upon better

times; not only are the Delaware ship-yards well supplied with orders for iron steamships, but the rise in freights has instilled new life in the coastwise trade, and the Maine ship-yards are at present quite busy and anticipate a good season for the construction of wooden vessels.—Boston Commercial Bulletin.

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### PROPOSALS.

PROPOSALS FOR CONSTRUCTION OF RIP RAP FOUNDATION.—U. S. Engineer office, Cleveland, O., October 12th, 1888. Sealed proposals, in duplicate, will be received at this office until 12 o'clock m. on Tuesday, the 6th day of Nov. next, at which time they will be opened in presence of bidders, for constructing 600 lineal feet, more or less, of rip rap foundation for breakwater at Cleveland, Ohio. All information can be obtained at this office. The United States reserves the right to reject any and all proposals. The sum allotted for the work, exclusive of the amount necessary for superintendence and office expenses, is about \$12,000. L. COOPER OVERMAN, Major of Engineers.

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HIGHEST ELEVATION ON HANDSOME STREET.  
American Plan, \$3.00 to \$4.50 per day.  
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Offers to resident and non-resident creditors a safe and prompt method of collecting debts. Offers to furnish creditors, on application, the present standing of any firm in the state. This agency represents credit rs throughout the states to look after their outstanding accounts, to protect them in giving credit, and to notify them when any of their customers begin to get in bad shape. Its chief field of operations is directed to Commercial Channels, and will confine its workings solely to this state. This Agency will furnish an estimate of the Financial Standing and Reliability of any business firm doing business in this state, to commercial travelers or sal. men representing firms who are our patrons. Being familiar with the leading attorneys in Georgia, we have selected none except the leading and most reliable attorneys in the different cities and towns, and we can assure our patrons that claims sent to us will be immediately placed in the hands of attorneys able and reliable in every particular. We shall publish a book annually containing general information, and the same will be furnished to our patrons. Send your claims to S. G. LEAK, and correspond only with him at headquarters, Griffin, Ga. Address

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- 4 Hoisting Engines
- 2 Root Rotary Blowers.
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1 Brass Turret Lathe.

1 Planer, 24 in. x 24 in. x 5 and 8 ft.

1 Planer, 36 in. x 30 in. x 7 ft.

1 40 in. x 40 in. x 14 ft.

1 Screw Planer, 18 in. x 3 ft.

1 Shaper, 6-in. stroke. 1 12-in. Shaper, two tables

1 24-in. Hendey Shaper.

1 Crank Planer. 6 Lincoln Pat. No. 2 Millers.

1 each 3 and 6 Spindle Gang Drill.

1 each Nos. 1 and 2 Screw Machines. Wire Foot

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1 375-lb. Drop Hammer. Beecher & Peck.

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FIG. 1.



FIG. 2.



FIG. 3.

Cuts No. 1 and 2 represent an improved noiseless street motor, such as are being used in many Southern cities and towns, where they are said to be much cheaper to maintain and more desirable than horse cars. One motor will do the work of from 10 to 30 mules, the cost of maintenance being from \$4 to \$6 per day for engineer, coke and oil.

With anthracite coal or coke fuel no smoke is made, and the noise of steam is avoided by a patent quieter.

Locomotives is that the smoke is injurious to the miners. Its best answer is an actual test properly made. Experience makes mine locomotives popular with miners, since, if annoyance is felt from the smoke, the ventilation of the mine is shown to be defective, and the mine operator, to secure to himself the advantages and saving obtained by the use of the locomotive, must secure to the miners a proper supply of pure air. Thus the locomotive not only has done no harm, but has pointed out an

her work without any trouble. The practicability and economy of working our mines by small locomotives is settled to our satisfaction. The system of ventilation in our mines is to conduct the fresh air first to the working places of our miners, and thence to the headings in which the locomotives work, and thence, carrying the little smoke and gas that is made with our somewhat smoky Cumberland coal, immediately to the open air again. We hear no complaints from our miners."

THE November number of the Popular Science Monthly deals with many subjects of live and substantial interest. The first article is on "The Effects of Protection," by Charles S. Ashley, who aims to show that protection is expensive, that it benefits but few, fails to keep up wages, checks our export trade, and makes us "a nation of liars," and our government a heedless spendthrift. "Altruism Economically Considered," by Charles W. Smiley, is a vigorous indictment of those alms-givers who are

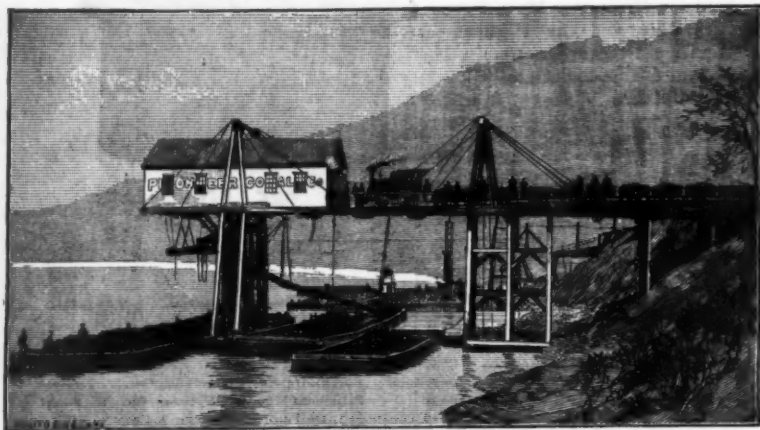


FIG. 4.

These motors are made in different sizes and styles to fit the requirements. Among the Southern towns and cities using the Porter noiseless motors might be mentioned Selma, Ala., New Orleans, Richmond, Vicksburg, St. Louis, Atlanta, Birmingham, Dallas, Texas; Milledgeville, Ga.; Columbus, Ga.; Tampa, Fla., and other cities.

Among the most important usages of

existing danger, which was the more hurtful because imperceptible. Even where mines are badly ventilated a mine locomotive does good rather than harm, since by its passage through the entry a draught is made which expels the foul air and smoke together. It is only necessary to supply mine rooms with fresh air independently of the main entry, which is the best and simplest method of ventilation, whether a



FIG. 5.



FIG. 6.

light locomotives is for logging, coal mining and shipping, and coke making, and engines of a special pattern are constructed for this purpose.

In adapting locomotives to inside use in coal mines where small mule and tram cars had formerly been used difficulties were encountered and overcome. The grades and curves were usually excessive and the rails light and often wet; considerable power is required in a very contracted space; dry steam must be obtained,

locomotive is used or not. Mr. J. A. Millholland, lately resident agent of the Consolidation Coal Co., Maryland, says, in regard to the effect of mine locomotives on ventilation: "The 'Mole' now lives entirely under ground, hardly ever coming to the surface. We have so arranged the ventilation of our mines that the little locomotives are no more objectionable to the miners than horses. The 'Ant' draws her train 2½ miles into our Astor mine from our Hoffman mine opening, and daily does

Cut No. 4 represents an ingenious device for sorting, loading and shipping coal by water. It is often cheaper and more practical to extend a mine road to the water and market in that way than to build a branch of wide gauge road from the mines to a main artery of railroad.

As a large per cent. of the coal mined at the present time is consumed in manufacturing coke, that industry has grown to such mammoth proportions that many light locomotives are used and greatly facilitate dispatch in charging the ovens and removing the coke. Light locomotives have become invaluable also for furnaces and steel plants—for shifting in the former, and in the latter for moving hot ingots and blooms to the rolls. Probably the smallest variety known is the plantation engine used on some of the large plantations near New Orleans and in South America.

Cut No. 7 illustrates one style of logging locomotive adapted for heavy grades and curves. It is in use in California. These are made from 36-inch gauge to the widest Southern gauge to suit the condition of the country and locality.

A new catalogue containing cuts of every variety of light locomotives, together with valuable tables giving com-

too lazy to give judiciously, and who consequently exert a debasing influence upon the poor. Mr. W. J. McGee tells what is known about the earliest inhabitants of America, in an illustrated article entitled "Paleolithic Man in America: His Antiquity and Environment." Two other illustrated articles in this number are, one on "Problematical Organs of Sense," by Sir John Lubbock, who shows that there may be colors, sounds, and even unknown sensations in nature, which insects perceive, but which we cannot; and another on "Ainu Family Life and Religion," by J. K. Goodrich—the third paper on Ainu customs by this interesting observer. Prof. N. S. Shaler contributes an account of "Habits of the Great Southern Tortoise," dealing especially with the underground work of this creature. In "Everyday Life of Indian Women," Captain R. C. Temple tells of many customs that are strange and almost incredible to the Western world. "The Problem of a Flying Machine" is stated by Professor Joseph Le Conte, who maintains that a true flying machine, self-raising, self-sustaining and self-propelling, is physically impossible. Every one who wishes to know what habits, occupations, diet and physique are most conducive to long life, should read the article on "The Prolongation of Human Life,"

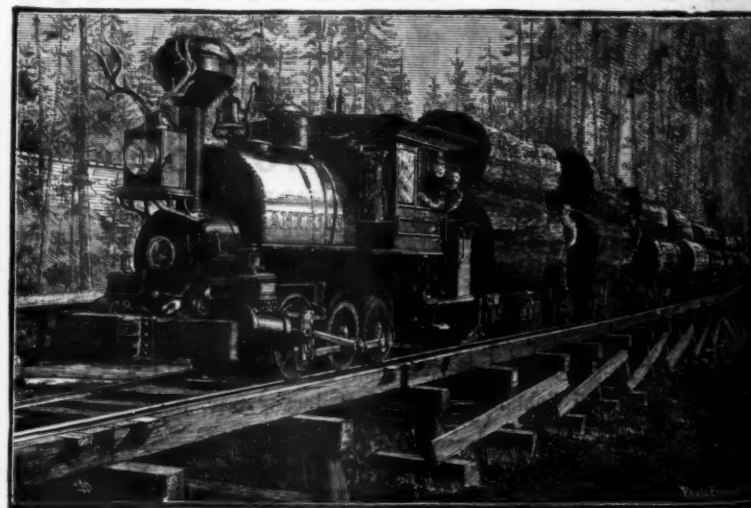


FIG. 7.

parative costs and much valuable information about the construction of roads under different conditions, will shortly be issued by Messrs. H. K. Porter & Co., Pittsburgh, Pa., and will be sent free upon application to parties interested.

If you are not already a subscriber to the MANUFACTURERS' RECORD send us \$4 and you will receive it regularly for one year or six months for \$2.00

by C. M. Hammond, who has collected information on these points from several thousand persons. Some curious observations on "Sun-Power and Growth" are described by Julius Stinde, and Dr. Oswald contributes one of his inimitable zoological sketches about "Four-Handed Sinners." A portrait is given of Edward Atkinson, with an account of his life and his work in economic science. The departments are full of choice bits of scientific knowledge. New York: D. Appleton & Co. 50 cents a number, \$5 a year.



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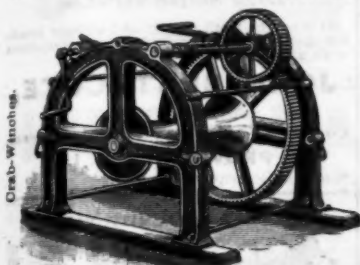
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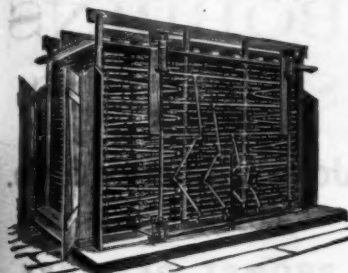
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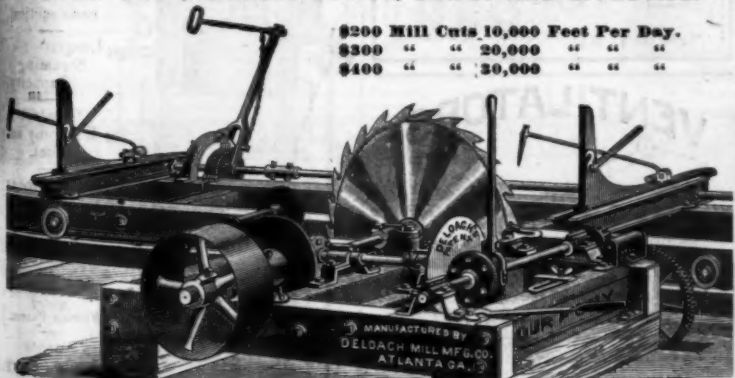
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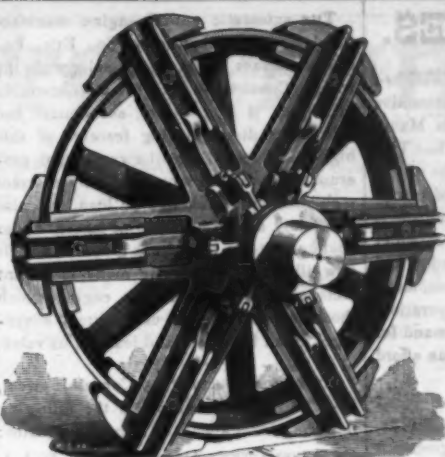


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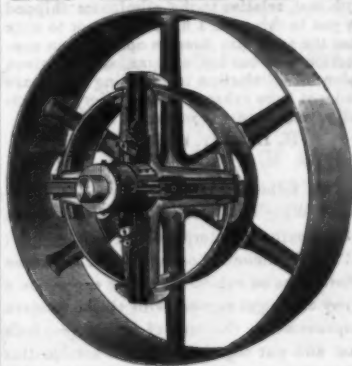
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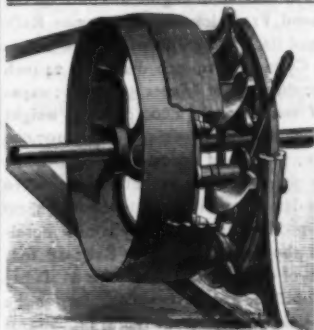
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## TRADE NOTES.

PERHAPS no catalogue has been published recently whose "make up" was as attractive and handsome as that of the Goulds Manufacturing Co., of Seneca Falls, N. Y. This company has just issued a catalogue of 288 pages, devoted to the description of pumps and hydraulic machinery. The catalogue is printed on extra fine super-sized calendar paper and has a beautiful tinted border, and each page abounds with illustrations, many of which show machinery in operation. There will doubtless be a large demand for this book, as no one in the trade can afford to be without it.

THE Westinghouse Electric Co., of Pittsburgh, Pa., have entered into an agreement with the Consolidated Electric Co., of New York, operating the Sawyer-Man patents, by which the latter company is absorbed by the Westinghouse Co., who agree to pay the Consolidated Co. \$150,000 per annum, which is 6 per cent. interest on the latter's capital. The capacity of the Consolidated plants is 7,500 lamps per day, which, with the mammoth plant of the Westinghouse Co. in Pittsburgh, will give this concern extraordinary facilities for supplying the demands for incandescent electric lighting.

THE mammoth works of the Calumet Fire Clay Co., of Calumet, Jefferson county, O., have been very busy during the past few months. Quite a large amount of their sewer pipe has recently found its way into the South. The pipe for the Asheville, N. C., sewerage system will be made by this company, and a number of Virginia and Alabama towns and cities are using the same product. Natural gas and the splendid fire-clay found in the Ohio valley, both sides of the river, have made this section one of the greatest centers for manufacturing fire-clay products in the world. The Calumet Co. have branches in Cincinnati and Louisville, and are prepared to give prompt estimates on sewerage system upon application.

MR. JAMES BATES, Nos. 1, 3 and 5 President street, Baltimore, reports a steady increase in his business, having enough orders booked to keep him running for some months. Mr. Bates is Baltimore's oldest and well-known elevator manufacturer, who has an extensive city trade and a very large and increasing Southern trade; in fact, his business is not strictly confined to any one section, but comes from all parts of the country. His elevators are adapted for warehouses, stores, factories, hotels, public institutions and everywhere that merchandise, &c., is transferred from one story to another. It has been one of his aims to make his work advertise his business, and wherever one elevator is placed in a warehouse, public institution, &c., in a new city or town, he is certain to receive other orders therefrom.

WITHIN one week the Cincinnati Centennial Exposition closes, and with it ends the grandest, if not the greatest, exhibition ever known. Especially is this the case with the government and mechanical departments, the latter department having a large display of wood and iron machinery which have many meritorious features. The commissioners selected jurors who are thoroughly practical men—men who are known for their honesty and integrity. These jurors awarded prizes to those only who were justly entitled to them. Among the very few new machines that have received first prizes are the Frybille twist machine and double boring machine, and the Dodds carving machine. These machines have attracted widespread notice, and the variety and quantity of work done on them is truly astonishing. The Cordeman Machine Co., Cincinnati, O., builders of a full line of wood-cutting machinery, will be glad to give any information desired concerning these machines.

THE automatic cut-off engine manufactured by the Ball Engine Co., Erie, Pa., still continues to be very popular with the trade. Constructed upon the most scientific principles, it is powerful, economical and safe. The distinguishing features of this high-speed engine are the centrifugal governor and valve, by which not only an exact regulation under change of load, but also absolutely a uniform rate of speed under change of steam pressure is given. In their new illustrated catalogue many important facts are given about this engine which those interested could use to great advantage. Send for a copy and learn of its value.

HINE & ROBERTSON, 45 Cortlandt street, New York, call attention to the following flattering letter about the Hine's eliminator: QUARTERMASTER'S DEPARTMENT U. S. A. Ft. McIntosh, Tex., Sept. 24, 1888.

MESSRS. HINE & ROBERTSON, 45 Cortlandt street, New York: Gentlemen—In reply to your letter of the 17th inst. relative to the eliminator shipped by you to this post, I have the honor to state that the same has been in operation in connection with our ice machine, and has given splendid satisfaction in expelling oil, grease and grit from exhaust steam. Very respectfully, your obedient servant,

H. LIGGETT, 1st Lieut. 5th Inf., A. A. Q. M.

THE following clipping from the Richmond Whig of October 19th demonstrates what Southern enterprise can accomplish: "The Richmond Locomotive & Machine Works has on exhibition at the exposition a 19 by 24 Mogul engine, with all the modern improvements, the parts of which were both cast and put together at the works in this city. The mammoth engine was built for the Richmond, Fredericksburg & Potomac Railroad, and its leading dimensions are as follows: Cylinders, 19-inch diameter, 24-inch stroke; diameter of drivers, 51 inches; capacity of tender tank, 2,000 gallons; weight of locomotive in working order, 107,000 pounds; weight of locomotive on drivers, 92,000 pounds; total weight of locomotive and tender in working order, about 159,000 pounds. The same company is now building for the Georgia Pacific Railroad four engines of even greater proportions. It has on exhibition, also, a beautiful car for the street railway at Steubenville, O., and is building twenty more cars for other points."

Now that the season for the sale of plows and castings in the South has begun, the attention of the trade is called to the advertisement of S. R. White & Bro., Norfolk, Va., manufacturers and jobbers in farming implements of the latest and most improved patterns. This enterprising firm have lately built a spacious warehouse and factory which they have fully equipped with expensive machinery, that the orders of their large trade may be promptly and satisfactorily filled. So great has been their success in the manufacture of a line of plows adapted to the wants of the farmers that they have built up a large trade in Delaware, Maryland, Virginia, the Carolinas, Georgia, Tennessee, Alabama, Florida and Texas, and in these States the names and merits of their various plows have become fully known. Prominent among the line of plows made by them we find the Atlas, Clipper, Daisy, White's Chilled and White's Combined, and the Stonewall Cotton and Tobacco plow, which last-named plow has achieved countless victories over its opponents wherever met, over 60,000 of same having been sold. But to appreciate fully the utility and value of these specialties, those interested will have to obtain special circulars from the patentees and manufacturers, in which are given an accurate and full account of their various working qualities.

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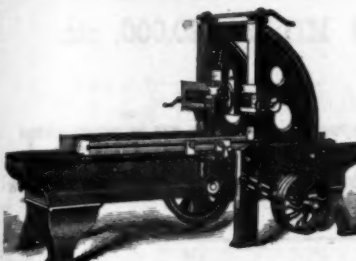
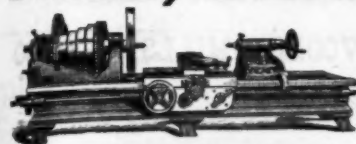
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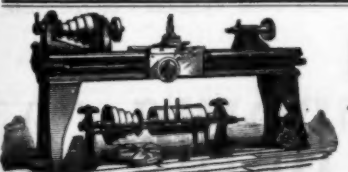
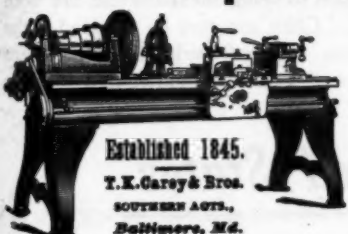
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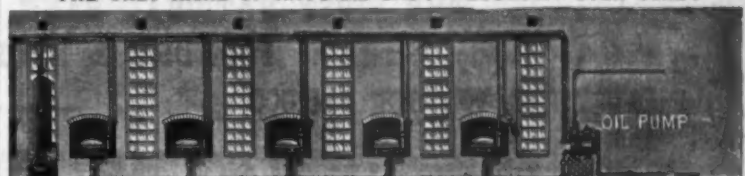
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Mark and name. Also

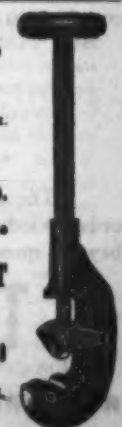
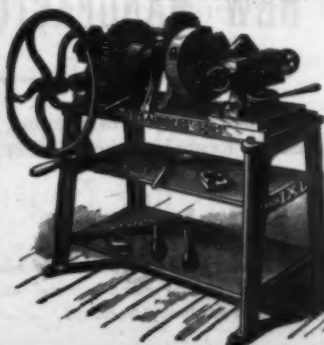
Patent Wheel Pipe Cutter

STEAM AND GAS FITTERS'  
HAND TOOLS.

Pipe Cutting and Threading Machine

For Pipe Mill Use a Specialty.  
Send for Catalogue R.

YONKERS N. Y.



# ATHENS, East Tennessee,

THE COMING

→ Iron and Manufacturing City of the South. ←

Athens is the county seat of one of the most fertile counties in East Tennessee. The health of the city is unsurpassed, and is **ABSOLUTELY FREE FROM ALL MALARIAL OR EPIDEMIC DISEASES**. The surrounding scenery is very fine. From the main avenue the whole valley of East Tennessee can be seen, from the Cumberland Mountains on the west to the Great Smoky Mountains on the east; some of the tallest peaks east of the Rockies being in full view. **FINE MINERAL SPRINGS** are adjacent and are popular summer resorts. The society of Athens is excellent. A cordial welcome is extended to all law-abiding people locating in the town. The **EDUCATIONAL FACILITIES** are good. Beside public and preparatory schools, Athens is the seat of **THE GRANT MEMORIAL UNIVERSITY**, which has an enrollment of over 300, and whose graduates include some of the most distinguished citizens in the country. Among the industries and institutions of the place in active operation are:

**THE ATHENS BUILDING & LOAN ASSOCIATION, \$250,000.**      **THE ATHENS WOOLEN MILLS, \$100,000**

**THE FIRST NATIONAL BANK, \$50,000.—To be increased at once.**

**FOUNDRY & MACHINE SHOPS, \$25,000.**

**FURNITURE WORKS, \$15,000.**

**FLOURING MILLS, \$20,000, etc.**

500 men are now at work on the new railroad from Athens to the

## RICHEST IRON FIELDS IN THE SOUTH.

—JUST EAST OF THE TOWN.—

Only eight miles from Athens are **VEINS OF RED FOSSILIFEROUS ORE 12 FEET THICK**, and 4 to 12 miles beyond are **THE LARGEST DEPOSITS OF BROWN ORES IN THE SOUTH**. The ores of both varieties, in addition to being inexhaustible, are both superior in quality to any ores of either variety at present mined in the South. An assertion that can be sustained. Coke can now be obtained at the lowest prices, and in addition a new railroad is now projected to the Cumberland Coal Fields, only 22 miles distant. These roads will give Athens **UNSURPASSED SHIPPING FACILITIES**. The road under construction will penetrate large deposits of Tennessee Variegated Marble; also an Unopened Timbered Region, and will develop the

### *Largest Colored Slate Deposits in the United States.*

These quarries are now being opened, and are pronounced by experts Absolutely Inexhaustible, and equal in quality to the finest Vermont Colored Slate.

## The ATHENS MINING & MANUFACTURING CO.

Have alone just contracted for the erection of over

### \$500,000 IN NEW MANUFACTURING ENTERPRISES

At Athens, including a 100-ton Blast Furnace, cost \$200,000; Cotton Mills, cost \$150,000; Furniture Works, employing 200 men, cost \$100,000; Hotel, cost \$60,000; Water Works, Street Car Lines, &c. These improvements have been commenced which, added to other improvements projected, will add

### \$1,000,000 OF NEW MANUFACTURING ENTERPRISES TO ATHENS.

The company desire to open correspondence with parties desiring to locate, and will extend liberal inducements in addition to gifts of sites in order to induce New Manufacturing Enterprises to locate in Athens. City property is doubling in value every few months, and at present low prices is beyond question a very fine investment.

## The Athens Mining & Manufacturing Company,

R. L. BRIGHT, President

R. J. FISHER, Secy. and Genl. Manager.



# ROME, GA.

OF all the growing cities in the growing South, Rome presents the greatest opening for money-making investments. With surrounding fields as rich as the lands of Goshen, with exhaustless deposits of brown and red Iron Ores and Manganese immediately at hand on all sides, with mountains of Marble and Limestone coming right up to the city, with an abundance of the best Coal easy of access, areas of untouched forests, and with seven railroad outlets and two navigable rivers, Rome stands, in natural advantages, pre-eminently above any other proud and pretentious city within the limits of this proud and ambitious commonwealth.

## THE HEALTH OF ROME IS UNSURPASSED.

*THE UNUSUALLY LOW DEATH RATE IS A PHENOMENON,  
STANDING WITHOUT A PEER AT 8.40 PER THOUSAND.  
NOT ONE CASE OF CATARRH OR CONSUMPTION EXISTS OR  
EVER ORIGINATED WITHIN HER LIMITS.*

Rome has 12,000 inhabitants, has invested in colleges and school buildings about \$300,000; in church building over \$100,000; in her new hotel \$125,000; in the dummy line, just completed, over \$50,000. Her manufactories employ 800 hands, with other enterprises now going up. Her system of water-works and sewerage is unsurpassed. The city is lighted with gas, and negotiations for an electric light plant are now pending. The highways leading to the city are all well macadamized. The Post-office Department has recently made Rome a free postal delivery office. The annual business of the city is about \$12,000,000, with the trade constantly increasing. The yearly range of temperature at Rome, between the average highest and lowest, is about 84 degrees; the mean temperature is 60.6 degrees. About seven months intervene between the first and the last killing frosts of the year. There is no better society to be found anywhere.

The Rome Land Company-(J. W. Rounsaville, President, T. F. Howell, Treasurer, and J. L. Bass, Secretary and Business Manager) will donate ample grounds to, and otherwise aid, any worthy manufacturing enterprise that may locate here.

Send for circulars and pamphlets.

PALMER, CUNNINGHAM &amp; CO., Limited.

SEND FOR  
Catalogue "C"—AGENTS FOR—  
KEARNEY & FOOT  
FILES.

607 Market Street, PHILADELPHIA, PA.

**TOOLS FOR MECHANICS**Railroad Supplies  
CHUCKS,  
DRILLS,  
REAMERS,  
SCREW PLATES,  
Etc.**HOOPEES & TOWNSEND,**  
MANUFACTURERS

PHILADELPHIA, PA.

ESTABLISHED IN 1865.

**Richmond Locomotive & Machine Works**  
RICHMOND, VA.

BUILDERS OF

**LOCOMOTIVES.** Standard and Narrow-Gauge, for  
for every variety of service. Pole  
Road Locomotives and Cars, the only  
successful device of the kind made.Stationary and Portable **ENGINES.** 12 to 300 Horse-Power.Standard and Special, 12 to 300 horse-power.  
Gas, Water, Creosoting and other heavy ma-  
chinery. Catalogues, specifications, photo-  
graphs and estimates furnished on application.**BOILERS.**

STEEL RAILS

PENNSYLVANIA

Standard Sections  
Light Sections  
Street RailsFish Plates,  
Frogs, SwitchesSTEPHEN W. BALDWIN  
SALES AGENT

16 lbs. Full Size.

STEEL COMPANY

50 to 80 lbs. per yard  
16 " 45 " " "  
30 " 88 " " "  
Bolts & Nuts,  
and Crossings.NO. 2 WALL STREET  
NEW YORK N.Y.\* **BUCYRUS FOUNDRY & MFG. CO.**

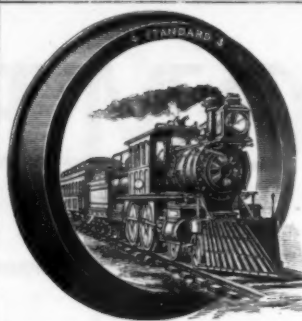
BUCYRUS, OHIO.

Builders of

Steam Shovels,

Steam Dredges,

WRECKING CARS. \*

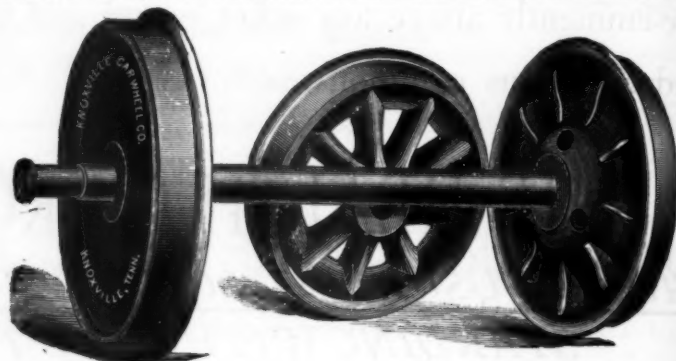
**Record Printing House,**Fine Cut Work  
A Specialty.  
Cor. Exchange Place  
and Commerce St.**The STANDARD  
Steel Works,**  
—MANUFACTURERS OF—  
Locomotive and Car Wheel  
**TIRES.**OFFICE: 220 SOUTH FOURTH ST.  
PHILADELPHIA, PA.**Knoxville Car Wheel Co.**

—KNOXVILLE, TENN.—

Manufacturers of All Kinds of

**CHILLED WHEELS**

For Railroads, Street Railroad, Ore and Coal Mines, and Lumbermen.

Steam Hammers,  
Steam Hoists,  
Foundry Cupolas,  
Derricks, Crabs,  
Horse Powers,  
Shieves, Drill Heads,  
Gearing, Pulleys,  
Bolts of all sizes,  
Locomotives and Engines  
Repaired and Indicated.

CORRESPONDENCE SOLICITED.

Steel and Iron Boilers,  
Guild's Automatic  
Boiler Cleaner,  
Car and Locomotive Castings,  
Soft Iron Castings of all kinds.  
Heavy Castings a specialty.  
Wheels mounted on Axles if  
desired, with Oil Boxes  
and Bolts.

MENTION THIS PAPER.

JOHN STEPHENSON COMPANY LIMITED NEW YORK

TRAMWAY CARS OF EVERY DESCRIPTION  
LIGHT, ELEGANT, DURABLE**DETROIT FOUNDRY EQUIPMENT CO.**

DETROIT, MICH.

MANUFACTURING

Whiting's Improved Car-Wheel Foundry Plant, Improved Cupola,  
Improved Overhead Steam Crane, Improved Car-Wheel Chills,  
Improved Transfer Trucks, Improved Device for  
Operating Foundry Ladles, Improved  
Reversible Friction Gearing.

Steam and Power Cranes Castings of all Descriptions, Ladles, &amp;c.



## TRADE NOTES.

AN improved Pevey card attracts a good deal of attention at the Appleton Co.'s mill, Lowell, as it takes a small amount of floor space and does large amount of work. It is daily visited by the prominent cotton manufacturers.

THE Westinghouse Electric Co., of Pittsburgh, Pa., last week received an order to furnish the apparatus for 1,700 electric lights for Evansville, Ind. There were quite a number of competitors for the contract. A local company will operate the plant.

W. H. WHEARY, superintendent Ettrick Manufacturing Co., Petersburg, Va., has recently returned from an extended trip among the Northern mills, and has picked up many valuable points. Mr. Wheary is among the liveliest of Southern cotton mill managers.

THE Standard Iron Co., of Bridgeport, Ohio, who are extensively engaged in the manufacture of sheet iron and sheet steel, corrugated roofing, siding and ceiling, report a very large fall business, and that they are severely taxed to supply dealers and roofers with their product, for which there is a constantly growing demand.

HEYL & PATTERSON, Pittsburgh, Pa., contractors for the erection of coal and coke washing plants, are erecting for the Montana Coal & Coke Co., Fairmount, W. Va., a coal crushing, washing and elevating plant having a capacity of 650 tons in seven hours. They solicit correspondence regarding this class of work from Southern coal producers.

THE specialties of the Belden Machine Co., New Haven, Conn., are meeting with a large sale. Machinists can find a full supply of valuable tools always on hand at the works of this concern, and on short notice can have drop forgings of every description made to order. They manufacture only first-class machines and tools, which they fully warrant.

USERS of pulleys, particularly the proprietors of cotton mills, should have all loose pulleys fitted with metal lined bushes and thus obviate the danger of fire from overheated journals. These bushes can be had of the North American Metaline Co., 37 Bleecker street, New York city, from whom testimonials may also be obtained as to the value of this device.

THE Freeman Fire Clay Co., postoffice address Freeman, Jefferson county, Ohio, who manufacture sewer pipe, flue linings, chimney tops, fire-brick, fire-proof building material and patent terra cotta street paving blocks, etc., report an active demand for their product, which they ship to all parts of the country. Price-lists of new specialties will be mailed upon application.

THE Thompson Manufacturing Co., Cleveland, Ohio, are having a large run on their pressed standing seam cold rolled steel roofing, and their extensive works are taxed to their capacity to supply the demands of the trade on their various specialties. They also design and erect iron truss roofs, fire-proof doors and shutters, and on application a splendidly illustrated catalogue will be mailed to those interested.

THE Astma Iron & Steel Co., of Bridgeport, Ohio, (opposite Wheeling, W. Va.) make a specialty of and are large manufacturers of steel bars, sheets and plates, and light T and street rails. Nothing but steel rails are now used in the East and West for tram roads, dummy lines, etc. They are said to be much cheaper in the end, considering the greater durability. This company manufacture all sizes and grades of light steel rails, and will quote prices upon application.

THE Tanite Co., Stroudsburg, Pa., in a neat pamphlet call attention to their manufactures. This company make a full line of emery grinders, stove plate machines, grinders and automatic planer knife grinders, and are prepared to fill all orders promptly. The pamphlet is fully illustrated and the various machines are minutely described. Prices, weight and capacity of machines are also given.

STEVENSON & Co., well-known manufacturers of brick, tile and terra cotta machinery at Wellsville, Ohio, report a splendid business for this season of the year. This concern manufacture several specialties in clay-working machinery that are fully described and illustrated in their catalogue, which would be interesting to Southern brick and tile makers contemplating an increase in their plant.

THE street lamps of the Sun Vapor Street Light Co. are meeting with a large sale, being adopted by cities, towns and villages throughout all parts of the country. With the use of the Sun Vapor, these lamps are said to give a light whose brilliance equals the best coal gas. Testimonials from numerous public functionaries have been received by this company as to the value of this system of street lighting.

THE Hagerstown Manufacturing Co., Hagerstown, Md., offer for sale in another column a fifty horse-power engine and return tubular boiler in good condition. Proprietors of manufacturing plants would do well to make a note of this, as a bargain may no doubt be purchased. By an error on the part of the advertisers this advertisement was recently made to read "wanted to purchase" instead of "for sale."

MESSES. CALDWELL & PETERSON, of Wheeling, W. Va., are doing some fine work in steel roofing. Said a Wheeling man: "There is a certain style and finish about their work that is above the average, and they never fail to give satisfaction." This concern believe that their best advertising consists in using first-class materials and doing the best work possible, even if by so doing their profits are smaller.

THE American Leather Link Belt Co. report recent sales of their belting to the following: J. H. Horne & Sons Co., Lawrence, Mass.; Angle Lumber Co., Houston, Texas; P. Lorillard & Co., Jersey City, N. J.; Economic Gas Engine Co., 34 Dey street, New York; Remington Paper Co., Watertown, N. Y.; Heidenheimer Bros., Galveston, Tex.; Travers Bros., 556 W. 53d street, New York; Philadelphia Rubber Works, Philadelphia, Pa.

FIRE-CLAY is now manufactured into paving bricks by the hundred thousand in and around New Cumberland, W. Va. This paving material not only makes an elegant smooth street, but also a very durable one, easy to repair and not costing much at first. Its many superior features are commending themselves to the public and at no distant day we predict it will become a most popular as well as practical paving material. For cleanliness it cannot be excelled.

THE Nordyke & Marmon Co., mill builders at Indianapolis, Ind., have just completed a 1,500-barrel roller process flouring mill at Nashville, Tenn., for the American Mill Co., which is by far the largest mill in the South. It is a superb piece of workmanship, making most elegant flour, and adds, counting in the power plant, elevator and warehouses, fully \$500,000 to the capital invested in the flour-making industry at Nashville. About 7,500 bushels of wheat daily will be required by this mammoth enterprise.

A. J. SWEENEY & SON, Wheeling, W. Va., well and favorably known throughout the South as builders of marine and stationary engines and complete outfits of machinery

for steamboats and rolling mills, have added another specialty, viz: the manufacture of machinery and outfits for plate glass works. They are doing considerable business in and around Wheeling, and also in Indiana, where they equipped the glass works at Kokomo. Correspondence relating to this specialty will receive prompt attention from Messrs. Sweeney & Son.

## Important.

When visiting New York city, save baggage express and carriage hire, and stop at the Grand Union Hotel, opposite Grand Central Depot.

600 handsomely furnished rooms at \$1 and upwards per day. European plan. Elevators and all modern conveniences.

Restaurants supplied with the best. Horse cars, stages and elevated railroads to all depots. You can live better for less money at the Grand Union Hotel than any other first-class hotel in the city.

THE American House, Boston, is one of the favorite hotels of that city. It has a large patronage of the best class of guests, and visitors will there find a hotel under the most perfect management.

WHEN in Cincinnati, stop at the Palace Hotel. Rates, \$2.00 and \$2.50 per day; meals, 50 cents each. Elegant rooms; fine table, and centrally located.

**WESTPHAL'S IMPROVED REVOLVING SCREW BOLT AND SHOT CASES. ADJUSTABLE FIRE BACKS AND LININGS FOR COOK STOVES. IRON STORM THRESHOLDS.**  
SEND FOR ILLUSTRATED CIRCULARS.  
SCHENCK'S ADJUSTABLE FIRE BACK CO.  
94 MARKET STREET, CHICAGO.

**THE Chamberlin Cartridge Co.**  
CLEVELAND, OHIO.  
The Only Perfect Ammunition  
FOR BREECH-LOADING SHOT GUNS.  
Illustrated Pamphlets free to Sportsmen and Hardware Trade upon application.

**"The Colliau" New and Improved HOT BLAST CUPOLA**, (patented, March, 1884,) and New Smokeless and Automatic Feed Boiler, (patented 1886 in U.S.) Correspondence solicited for plans of foundries and the economical working of cupolas, the saving of fuel in melting iron and steel, and in the production of steam. Address VICTOR COLLIAU, Mechanical Engineer and Architect, 287 Jefferson avenue, Detroit, Michigan.

## STEAM PUMPS

For every duty. Best Materials only used. Fully guaranteed and tested. It will pay you to write for prices.  
HUGHES STEAM PUMP CO.,  
CLEVELAND, OHIO.  
Deagan & Swift, New York Agents.



**BOOKS** Relating to Mechanical, Mining and Electrical Engineering. Descriptive Catalogue and information about any book sent promptly on application.

**E. & F. N. SPON,**  
12 Cortlandt Street, - NEW YORK.

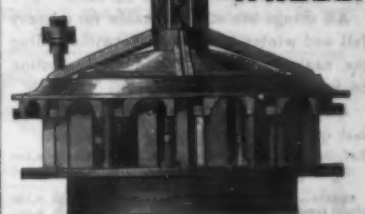
**JOHN WILEY & SONS,** 15 ASTOR PL. New York.

—Publishers of—

**Scientific and Industrial Works.**

Send for Catalogue and Circulars—Free by mail.

## SUCCESS WATER WHEEL.



This Wheel is strong and durable. Excelled all other wheels in the great trial tests. Is in use all over the nation. I also make a specialty of

**Heavy Gearing and Machinery for Paper, Cotton and GRIST MILLS.**  
**S. MORGAN SMITH**  
YORK, PA.



## PENBERTHY AUTOMATIC INJECTOR.

Simple, Reliable, Durable. Send for prices.

MANUFACTURED BY THE  
Penberthy Injector Co.  
DETROIT, MICH.

—FOR THE BEST—  
**BOILER COMPOUND,**  
ADDRESS  
**THE INTERNATIONAL MFG. CO.**  
280 Pearl St. CLEVELAND, OHIO.



**A. B. FARQUHAR, York, Pa.**  
Improved Standard Iron-Frame Grist Mill for Corn, Wheat and other Grains. It will pay every one who owns an engine to have one of these Mills. 16 inch will grind from 5 to 15 bushels per hour, depending upon speed. 20 inch from 5 to 25 bushels per hour. Steam Engines, Grist Mills, Saw Mills, Shingle Machines, and Standard Implements a specialty. Send for Catalogue.

**BRICK AND TILE MACHINERY**  
BEST IN THE WORLD.  
Send for circular & prices.  
**J. W. PENFIELD & SON,**  
Willoughby, Ohio.  
Stands Unrivaled. Lock Box 96.

—For the Latest Improved—  
**FAST FEEDING**  
**Planing Mill Machinery,**  
ADDRESS THE  
**Preble Machine Works Co.,**  
CHICAGO, ILL.

## DON'T BUY AN ENGINE OR BOILER

Until you have seen our circulars. Engines complete from 5 to 110 horse power, both Vertical and Horizontal, at prices below those of other reputable makers. 1400 in use. Boilers of every style. Automatic Engines for Electric Lights. Centrifugal Pumping Machinery for Drainage or Irrigation. Established 22 years. Perfect satisfaction guaranteed. Ask for Circular M and address

**Morris Machine Works,**  
BALDWINVILLE, N. Y.

**PERFORATED METAL**  
FOR  
COTTON SEED OIL MILLS  
RICE MILLS  
MINING SCREENS &  
**THE ROBERT AITCHISON**  
**PERFORATED METAL CO.**  
16 Van Buren St. Chicago Ill.



## THE MARKETS.

OFFICE MANUFACTURERS' RECORD,  
BALTIMORE, October 24, 1888.

All things are still favorable for a heavy fall and winter business. Notwithstanding the nearness of the Presidential election business is good.

Rates of manufactured iron remain as last quoted, viz:

Ref. Bar Iron, 1 to 2 1/2 to 3	1.95	2.10
" " 3 to 4, round and	1.95	2.10
square	1.95	2.10
floor Iron, 1 1/2 wide and upward	2.40	2.50
Hand Iron, from 1 1/2 to 6 in. wide	2.40	2.50
Horseshoe Iron	2.40	2.50
Norway Nail Rods	3	3 C
Black Diamond Cast Steel	3 1/2	4 C
Machinery Steel	3	4 C
Spring Steel	3	4 C
Common Horse Nails	3	4 C
Railroad Spikes, 5/16 to 1 1/2	3.30	3 1/2 C
Steel Boiler Plate	2 1/2	4 C
Iron Boiler Plate	2 1/2	4 C
Boiler Tubes	2 1/2	4 C

Pig iron continues in fair demand. Scrap iron is a trifle off. The whole market is somewhat flat. Old steel rails have declined 1/2. We quote:

Baltimore Charcoal Wheel Iron	18	00	19	00
Virginia C. B. Charcoal Wheel Iron	18	00	19	00
Anthracite, No. 1	18	00	19	00
" " " "	17	00	18	00
" " " "	15	00	16	00
" " " "	14	00	15	00
Steel Rails	18	00	19	00
Old Rails	17	00	18	00
Old Car Wheels	18	00	19	00

## HARDWARE.

We have no change to report in the condition of the hardware trade. Prices remain firm and the demand steady. Large sales are reported in steel and wood goods, and from every indication the associated makers will sell their entire production. Prices are very firm, and with strong probabilities of an advance shortly. Orders are now coming in from the late fever district in the Southwest, and a fair trade will be done the balance of the season.

Nails are as last quoted, \$1.90 to \$2.

## Philadelphia Iron Market.

PHILADELPHIA, Oct. 23, 1888.

The iron trade in general is a shade quieter than the previous week. Standard brands of foundry are selling at \$19 and \$18 for Nos. 1 and 2 respectively. The large purchasers are pretty well supplied with material for a month or six weeks, so that the slight advances which have been made on some lines will not benefit the manufacturers much for the present, but they intend to try and keep prices where they are till the buyers are forced to come into market again. Forge is rather quiet at \$16.50. The stove founders have bought most liberally of both sheet and forge iron, but they seem now to be directing their attention principally to sheet iron, which is booming at 3 1/2 cts. for best refined, Nos. 26, 27 and 28. Blooms are not in as good demand as a week ago, but the mills took advantage of the brief activity a short time ago to file up orders for a month or so, and so do not feel the effects of the present lull. The quotations are as follows: Charcoal \$52 to \$54; anthracite \$42 to \$44; scrap blooms \$33 to \$35. Muck bars have been in very heavy demand this past week, and the makers have felt safe to raise quotations to \$30.50 on this account, though the orders placed at this price are not very numerous. Bar iron is not in as much demand as a week ago and prices are weaker in consequence of some orders made by Western concerns which were much below our prices here. Refined bars sell at 2c. and 1.95c. per pound, common bars 1.75c. to 1.80c. Plate and tank are in good request at 2 to 2.10c.; flange 3 to 3.30c.; shell 2.70c.; tank and ship plate 2.30 and 2.40c.; fire-box 5c. Structural iron makers are not receiving many orders for the present, but are expecting glorious times this winter and spring in consequence of the large amount

of projected bridge building. Merchant steel is fairly active at 8 1/2 cents for tool steel and 4 1/2 cents for crucible spring. Best sheet steel brings 10 cents and common 8 cents. Wrought iron pipe is being called for by a number of buyers. Quotations remain the same as last week. Steel rail makers are doing very little business. Bottom prices for rails for large lots \$28; for small lots \$29.50. Nails are still dull. At store they bring \$2 and \$1.95. Old rails are in good supply, but sellers still maintain high prices, so that buyers are compelled to wait till quotations drop a little. Present quotations \$24.50 to \$25. Scrap is in good demand. Car wheels sell well at \$18; cargo scrap \$21.50; car-load lots \$22.50.

## New York Iron Market.

Specially reported by WARREN, WOOD &amp; Co., Pig Iron, 115 Broadway.

NEW YORK, Oct. 23, 1888.

Pig Iron.—There has been some increase in the inquiries during the past week, and several orders for Southern brands have been received, ranging from 200 to 500 tons. Many of the consumers in the interior are laying in their stock for winter use, owing to the reason that navigation on the river usually closes about November 15th, and all rail rates are from \$1 to \$2 in excess of river rates. Prices remain very firm, and some furnaces are holding at an advance.

## Cincinnati Iron Market Report.

Specially reported by ROGERS, BROWN &amp; Co., Pig Iron Commission.

CINCINNATI, Oct. 22, 1888.

The market for iron may be described as dull and strong. Inquiries are only moderate, and the firm position of sellers tends to discourage sales. The farther reduction of stocks in the face of increased production and the oversold condition of nearly all furnaces, gives a stiff backbone to makers and dealers. As near as can be ascertained the current consumption of iron in the United States is the largest of any period in our history, not excepting the great railroad years. At the same time it must be understood there is abundant furnace capacity, and the danger of an iron famine is not immediate. In all branches of the iron trade the greatest interest is felt in the approaching election as involving results of importance to all. We quote for cash f. o. b. Cincinnati:

OHIO AND SOUTHERN STRONG COKE No. 1	16	50	17	00
" " " " No. 2	15	75	16	00
" " " " No. 3	15	00	15	50
OHIO SOFT STONECOAL, No. 1	17	00	17	50
OHIO SOFT STONECOAL, No. 2	15	00	16	00
MAHONING AND SHENANGO VALLEY COKE, No. 1	17	00	18	00
HANGING ROCK CHARCOAL No. 1	21	00	22	00
" " " " No. 2	19	00	20	00
TENNESSEE & ALABAMA CHARCOAL No. 1	18	00	19	00
" " " " No. 2	17	00	18	00

Strong Neutral Coke	14	75	15	00
Mottled " "	13	75	14	00
Cold Shortings	14	50	15	00

Southern Car-Wheel Iron	20	00	21	00
Hanging Rock Cold Blast	22	00	23	00
Lake Superior C. W. and Malleable	21	00	22	00

## Louisville Iron Market.

Specially reported by GEO. H. HULL &amp; Co., Commission Merchants for the sale of Hot and Cold Blast Pig Iron.

LOUISVILLE, KY., Oct. 22, 1888.

The market is quiet, prices are firmly held and buyers are willing to make purchase of iron for extended delivery. Furnaces consider the situation satisfactory, and in many instances are accepting orders for future delivery. There have been a few large sales during the week in lots of 500 tons; these, however, at a slight concession in price. The demand for old rails has fallen off and the market is decidedly weaker. Old rails are held at \$23 and old wheels at \$21. We quote as follows:

Southern Coke, No. 1 Foundry	17	00	18	00
" " " " No. 2	16	00	17	00
" " " " No. 3	15	00	16	00
Hanging Rock Coke, No. 1 Foundry	17	00	18	00
" " " " No. 2 Foundry	16	00	17	00
Southern Charcoal, No. 1 Foundry	18	00	19	00

Silver Gray, different grades	14	50	15	25
Southern Coke, No. 1 Mill, Neutral	14	75	15	00
" " " " " " " "	13	75	14	75
" " " " " " " "	14	50	14	75
Southern Charcoal, No. 1 Mill	15	75	16	50
White and Mottled, different grades	13	50	13	75
Southern Car Wheel standard brands	23	00	24	00
" " " " other brands	19	25	20	25
Hanging Rock Cold Blast	22	00	23	00
" " " " " " " "	19	25	20	25

Specially reported by HALL BROTHERS &amp; Co., Pig Iron Commission.

LOUISVILLE, KY., Oct. 22, 1888.

There has been a large increase in the volume of business during the past week; orders booked have been from various directions and for quite an assortment of the different character and grades of metal, and the transactions have aggregated several thousand tons. There is still a large amount of business in sight. Many of the consumers are pressing for deliveries on old contracts, and in many cases in excess of the monthly engagements, which few furnaces are able to meet. Shipments are very heavy. We quote cash f. o. b. cars at Louisville as follows:

MOY BLAST FOUNDRY IRONS.				
Southern Coke, No. 1	17	50	18	00
" " " " " " " "	16	50	17	00
Mahoning Valley, Lake ore mixture	30	00	31	00
Southern Charcoal, No. 1	18	00	19	00
Missouri " " " "	17	00	17	50
" " " " " " " "	19	00	19	50

FORGE IRONS.				
Neutral Coke	14	75	15	25
Cold Short	14	50	14	75
Mottled	13	75	14	75

CAR WHEEL AND MALLEABLE IRONS.				
Southern (standard brands)	22	50	23	00
(other brands)	18	00	18	50
Lake Superior	22	50	23	00

## Chicago Iron Market.

Specially reported by ROGERS, BROWN &amp; Co. W. W. BACKMAN, Resident Agent.

CHICAGO, Oct. 22, 1888.

The business for this week has been fairly good. There is strong demand for car-wheel irons, and some heavy contracts are

soon to be placed. Shipments on contracts continue rapidly, furnaces holding firm to present prices and adverse to making long deliveries, except at an advance of from 50 cents to \$1 per ton. Prices remain same as last quotations. Look for higher prices after election. We quote:

COKE AND STONE COAL FOUNDRY.				
Ohio (Hanging Rock) Softeners No. 1	18	50	19	00
" " " " " " " "	18	50	19	00
" " " " " " " "	18	50	19	00
" " " " " " " "	17	50	18	00
Southern Coke, No. 1	17	50	18	00
" " " " " " " "	17	00	17	50
" " " " " " " "	16	50	17	00

OLD MATERIAL.				
Old Iron Rails	24	00	25	00
Old Car Wheels	19	00	20	00

CHARCOAL FOUNDRY.				
Lake Superior	19	50	20	00
Southern	19	50	20	00
Hanging Rock	19	50	20	00

CAR WHEEL AND MALLEABLE.				
Lake Superior	19	50	20	00
Standard Southern	21	50	22	00
Hanging Rock, cold blast	24	00	25	00
" " " " " " " "	20	50	21	00

## DIXON'S Silica Graphite Paint.

**DURABLE AND BEAUTIFUL.** Unaffected by heat or cold, dampness, salt air, rust, or even acids. For smoke stacks, boiler fronts, tin roofs, or metal work, this Paint is far superior to anything made. For details send for circulars.

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The "Original Gandy" Stitched Cotton Duck Belting. For Endless Thresher Belt, Main Drivers, and for all places where belts are subjected to moisture or atmospheric changes, the GANDY stands paramount. For further information, price, etc., write to The Gandy Belting Co. BALTIMORE, MD.

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Pickier Leather, Stock and Farm Whips, Washers, Hame Straps, Hame Straps, Halters and other Rawhide Goods of all kinds, by Krueger's Patent.

This Belting and Lace Leather is not affected by steam or dampness; has more grip than any other; never becomes hard; is stronger, more durable and the most economical Belting made. Especially adapted for the Southern trade on account of its resistance to moisture. The Rawhide Rope for Round Belting Transmission is SUPERIOR TO ALL OTHERS.

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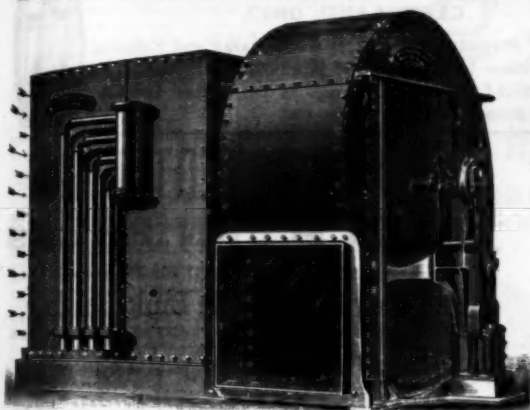
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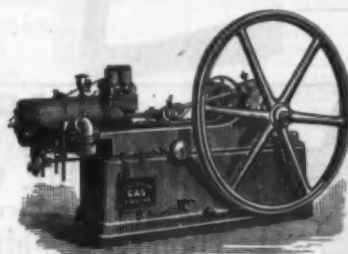
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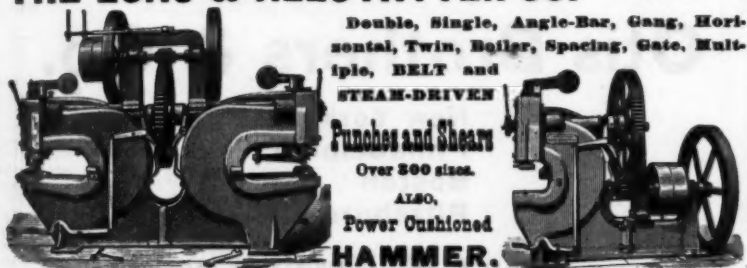
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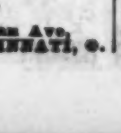
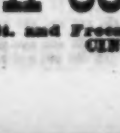
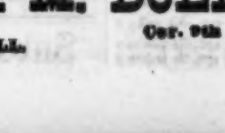
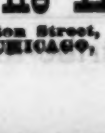
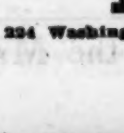
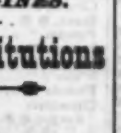
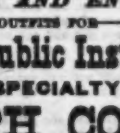
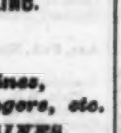
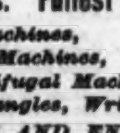
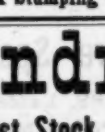
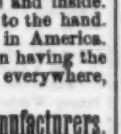
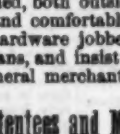
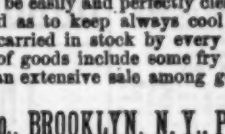
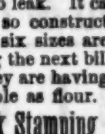
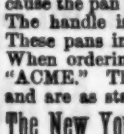
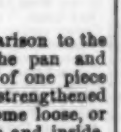
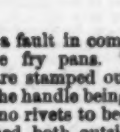
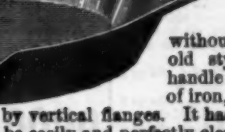
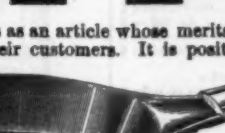
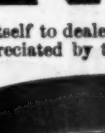
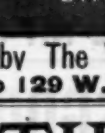
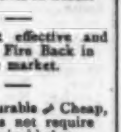
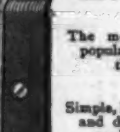
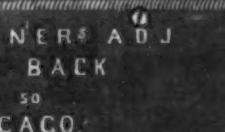
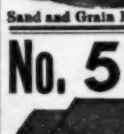
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J. F. MERRY.  
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PARLOR CHAIR CARS ON DAY, and SLEEPERS ON  
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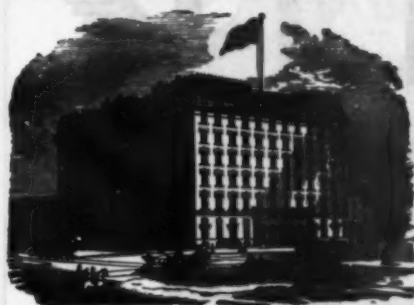
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Elegant suites can be secured by addressing

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## Queen City Printing Ink Co.

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### New Single Action Geared Press.

We present to our readers in this issue an illustration of a very powerful single crank press, especially adapted for manufacturing heavy goods from sheet brass, iron and steel. It may be briefly described as follows:

The heavy arch shaped body is supported on an iron table having strong frame legs. The slide has long adjustable bearings, and is provided with a steel

### The Wood Cotton Gin.

An improved cotton gin for ginning Sea Island and other varieties of long staple cotton is manufactured by John Heathcote, of Providence, R. I., which has many qualities that commend it to the attention of users.

It is a very simple machine, constructed with few parts, and with no suggestion at first glance of the efficiency it obtains in use, but satisfies at once the claim to strength and durability.

In use the cotton is spread on the table, from which it is fed and drawn between the rubber band and knife, through which it passes freely, but the seed are caught on the edge of knife, and as fast as they are freed from the staple drop through an opening into a receptacle prepared for them. This machine not only performs its work rapidly, but does it without any injury whatever to the staple. The longest staples in the market, as Sea Island and Allen seed cotton, have been ginned by this machine with perfect success.

Dealers and growers will do well to write Mr. Heathcote for further particulars than we could give in this brief description.

### Schenck's Belt-Holder and Shifter.

The accompanying cuts illustrate a device for controlling belts, invented and patented by U. H. W. Schenck, 93 Liberty street, New York city, and specially adapted to use in connection with heavy belts on dynamo, saws, blowers and other fast running machinery, and in which connection it has been pronounced a decided success.

Figs. 1 and 2 will give a very correct idea of its construction and method of operation.

The part associated with the pulley is of the same radius, semi-circular in form, and occupies a position to the pulley corresponding with that position in which the belt rests.

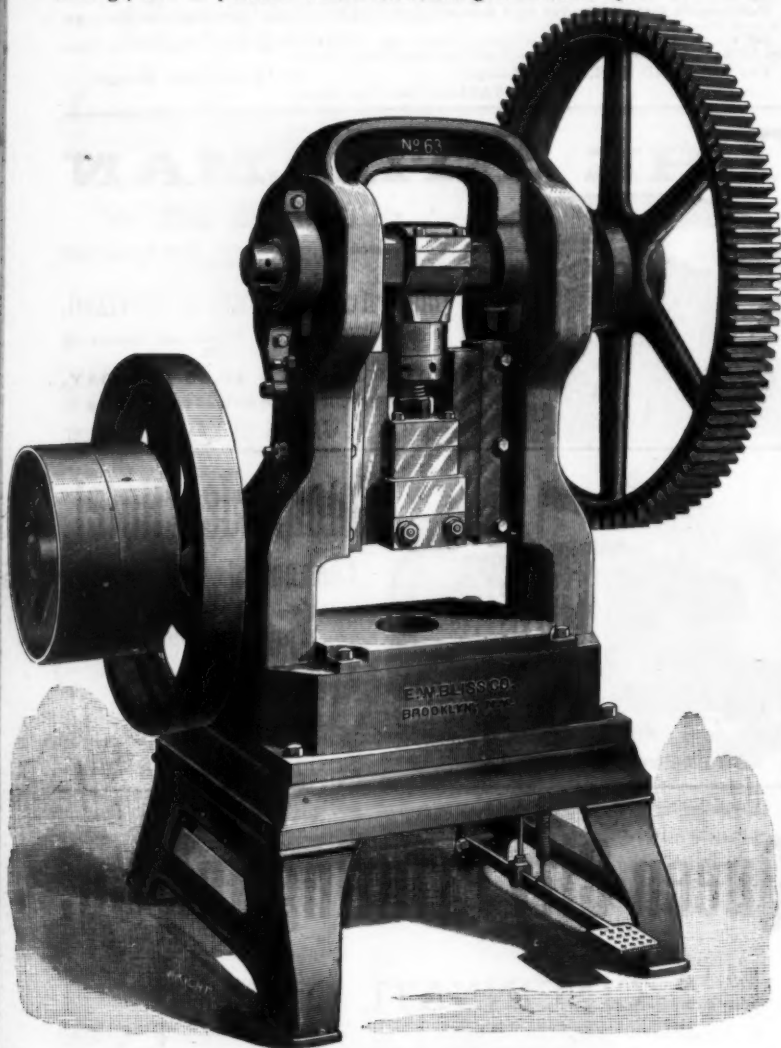
A pendent bracket secured to the ceiling or other suitable support is shown at A. The lower edge of the bracket is formed in a segmental line.

The bolts B, B, B, run through a removable segmental plate and secure it to the lower edge of the bracket. C is a sustaining plate formed in the shape of a sector, and is adjustable in foot A to any belt-receiving point. Another sector-shaped plate is placed parallel with plate C, and at a distance from it equal to the width of belt used.

shipped on to the holder and shifter by a common shipping rod, shown in Fig. 2.

The belt, when on the holder, becomes an idle belt, and the tension is much lessened. By raising the lever the belt is deflected to the pulley by the action of the spirals, and at the same time the tension is restored. This operation is so effectively done that there is absolutely no shock or jar, and in electrical work no slacking up of dynamo is required—points readily seen to be of great value.

This machine is made entirely of iron and steel, and consequently will not warp. It is also entirely independent of shaft,



NEW SINGLE ACTION GEARED PRESS.

binding cap to hold shank of punches. A shaft running in bearings on back of press frame is driven by pulleys 24 inches in diameter, and is provided with a fly-wheel to give steadiness of motion. On the opposite end of this shaft is a pinion which drives the large spur-gear on main shaft, and motion is communicated to the crank shaft at will by means of an entirely new and very powerful clutching device connected with the treadle. A friction strap on end of crank shaft insures the stopping of slide at upper part of stroke. The general dimensions of the press are as follows:

Width between uprights, 32 inches; opening in bed, 14x18 inches, or as required by the work to be done; motion of slide, 1 to 6 inches. The stall crank shaft is 5 inches in diameter, and bearings are 10 inches long. The spur gear is 60 inches in diameter by 6 inches face, and ratio of gearing is 7½ to 1. The fly-wheel is 45 inches in diameter, 6 inches wide and weighs 900 pounds. The total weight of press is 10,500 pounds.

This machine is built by E. W. Bliss Co., of Brooklyn, N. Y., who during the past few months have introduced quite a number of new machines of improved construction for the manufacture of sheet metal goods. It is designated by the manufacturers as No. 63, and they will cheerfully give more detailed information to manufacturers requiring this class of machines.

It is constructed principally of metal, having cast iron uprights to support the feeding table and moving parts.

A broad knife is fixed flatwise against the edge of the table running its whole length. Parallel with the knife, but at a certain distance above and below a line



THE WOOD COTTON GIN.

with the surface of table, rollers are placed, around which passes an endless belt, so arranged as to pass downward and touch the flat side of the knife through its whole length. The knife has a thin rounded edge, which is turned upward, projecting a little above the top surface of table.

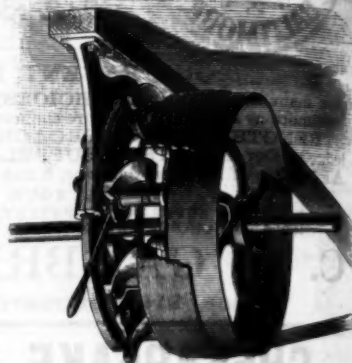


FIG. 1.—BELT HOLDER AND SHIFTER.

and makes a considerable saving in power, time, fuel, wear of belt, and by the removal of the strain from the shaft.

During the past three months this machine has been greatly improved and thoroughly tested on slow speeds, as well as with belts running at as high as 6,000 feet per minute.

All sizes have been made, for pulleys twelve inches in diameter and carrying four-inch belts, to 84-inch pulleys for 14-inch belts.

MURAT HALSTEAD was present as a correspondent at the battle of Gravelotte. In the November Century he will tell the story of the battle as he saw it, and give an account also of a subsequent visit to the battlefield after the monuments had been erected.

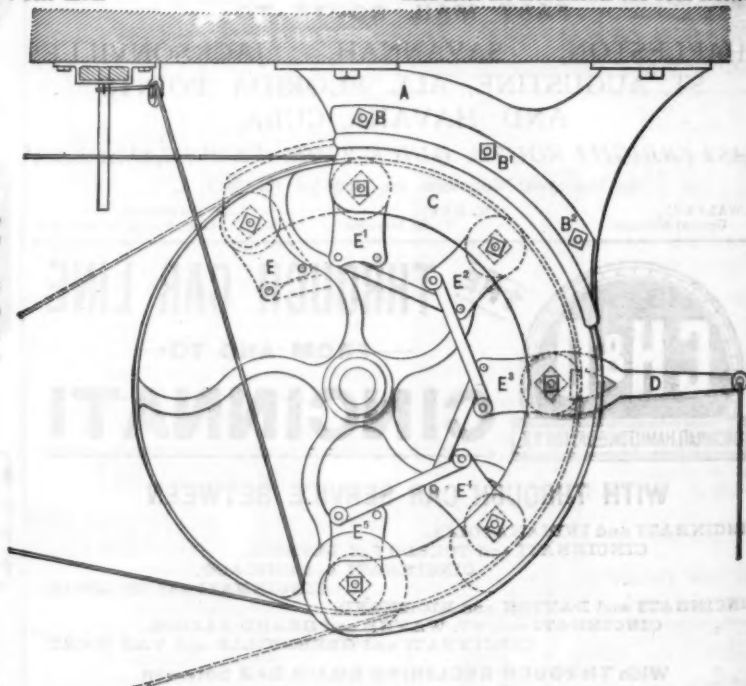


FIG. 2.—SECTIONAL VIEW OF BELT HOLDER AND SHIFTER.

Between these plates are placed webbed spiral shifters. Between webs of spirals rolls are placed, making a perfectly frictionless surface for the belt to be received upon.

The spiral shifters are moved in unison by locking devices, E, connected with each other by links, which are operated by a lever, D, projecting from any one of the locking devices.

When the lever is lowered, the belt is

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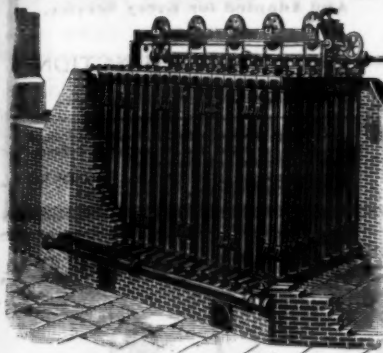
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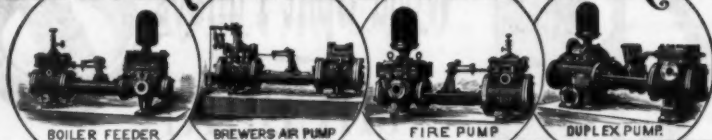
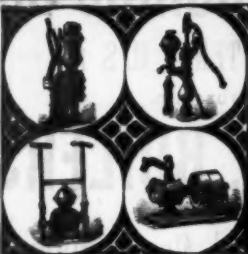
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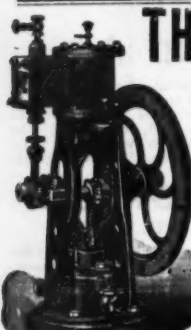
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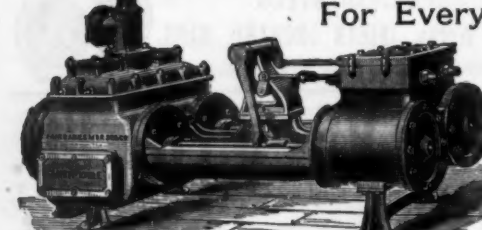
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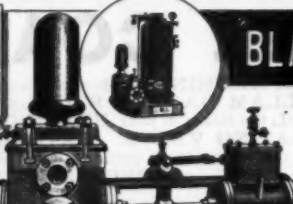
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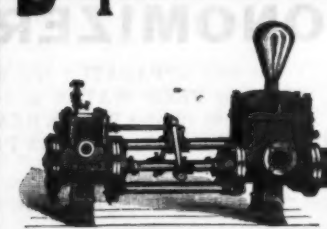
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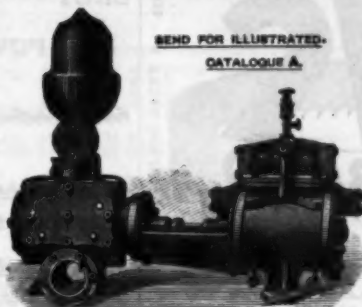


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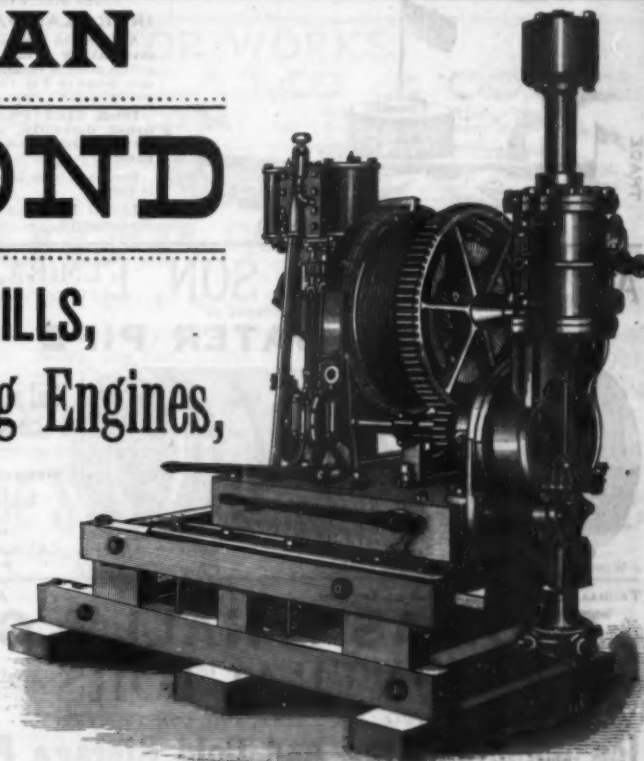
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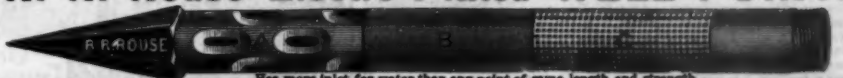


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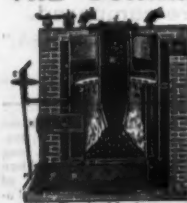
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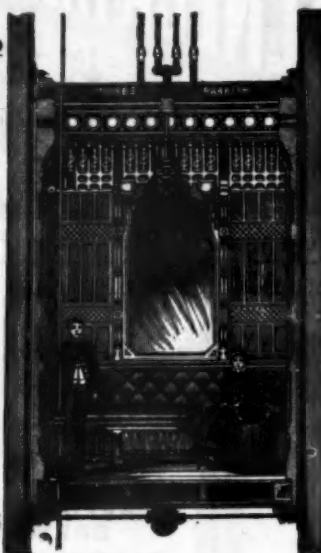
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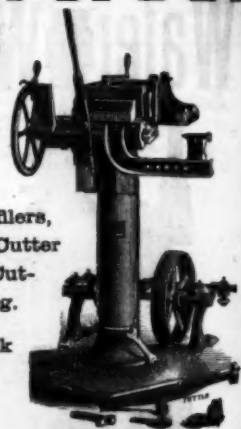
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